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ABSTRACT

Among the papers presented at the 15th Annual Convention of the International Reading Association were the 16 included in this volume. The papers, all dealing with relationships between language and linguistics and reading, reflect both a wide range of opinion on the subject and considerable variety of focus. The six research reports are all concerned with reading achievement, but under varying conditions. Among these are a study of variations in oral reading styles of fourth-grade nonstandard English speakers, and another of variations in reading achievement among subjects at nine grade levels. Theoretical discussions of language development as related to reading comprise the remaining papers. These include reviews of pertinent research and present ideas based on this research. Among the factors discussed are the development of language concepts, influences of sex on language development, and means of relating instruction to children's language abilities. Tables and references follow individual papers. (This document previously announced as ED 049 898.) (MS)

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LANGUAGE, READING, AND THE COMMUNICATION PROCESS

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The International Reading Association attempts, through its publications, to provide a forum for a wide spectrum of opinion on reading. This policy permits divergent viewpoints without assuming the endorsement of the Association.

Foreword

AMONG the papers selected for publication from those presented at the Fifteenth Annual Convention of the International Reading Association were several whose focus is on the relation between language and linguistics and reading.

The papers relating to this topic have been organized and edited by Dr. Carl Braun. Contained in this volume are sixteen articles: some treat the whole communication spectrum; some relate the oral language to the reading achievement of children who speak one or two languages or a dialect; and some indicate the contributions that linguistics can make to the improvement of reading and speaking.

The conceptual development of pupils is considered in other articles that emphasize language concepts, comprehension, and progress toward maturity in reading. The last two articles focus on factors that affect learning to read—the influence of the pupil's home environment and whether the reader is a boy or a girl. More boys than girls have had problems in reading, and one of the articles provides some explanations and suggestions.

Many teachers are continually striving to improve their methods for teaching reading. This volume will give them food for thought and some ideas for action. While linguistics is no longer a mystery to most, its concepts and their relation to the practical problems faced in the classroom still need clarification. These papers help explain the interrelationships, and the International Reading Association is pleased to present this group of articles as a contribution to the literature in the field. It is hoped that this material will help teachers in alleviating the problems of those who are struggling to master the printed word and will provide additional insights and understandings for anyone interested in the improvement of reading.

HELEN HUUS, *President*
International Reading Association
1969-1970

Introduction

THIS PUBLICATION reflects a long-felt need to place reading instruction and reading research into a wider perspective than has been true traditionally. While the message permeating the papers in the volume does not deemphasize decoding skills, the major thrust of the message focuses on reading as a process of communicating meaning—reading as a process enabling the reader to reconstruct ideas encoded graphically by the author. As such, reading is viewed within a total cognitive development, language based context.

The timeliness of the volume is evidenced particularly by the inclusion of papers attempting to ferret out significant interrelationships between the reading process and the child's linguistic system—phonological, semantic, and syntactic. While it is true that some papers in the collection do not deal with reading per se, the close adherence of comprehension skills to facilitation in language development justifies their inclusion.

This collection represents one of very few that incorporate linguists' views on phonics and phonetics—views that portend a reassessment of methods and materials both at the classroom and research levels.

The pervasive tone, highlighting the child's linguistic assets that he brings to the learning task, adds a refreshing note of optimism at a time when words such as *disadvantaged, deprived, deficit,* and *restricted* frequently color the teacher's attitudes and expectations.

C.B.

Communications and Curriculum Change

H. Alan Robinson
Hofstra University

INSTRUCTION IN reading and in all of the other communication skills is of little value unless perceived as relevant by the learner.

> The term "relevance" in education implies that what is to be learned is perceived by the learner as having meaning in his present life and the expectation that it will have utility in future learning or coping situations. It also implies a dissolution of the dichotomy between cognitive and affective factors, between content and feeling. There is no set ratio between these factors since a dynamic interaction is required in order to accommodate the vacillation in needs for each individual. . . (*4*).

Assuredly, competence is still ". . . a relevant educational concern. Information mastery, communicative competence, problem solving, and personal-social self-mastery are not irrelevant as educational goals. It is the manner in which these are represented in the curriculum and the purposes which formal education is perceived to serve that are irrelevant to our students' concerns" (*3*).

In the 60s emphasis was placed on the culturally deprived or disadvantaged. Such labels suggested that ". . . something was wrong with the learner, not with the school and its educational process"(*2*). In the 70s we must proceed from the realization that the school is disadvantaged. School has lost or is losing its meaning for a very large number of students. "Perhaps this is true because the school has faltered in acknowledging the need for personal interaction of both learners and teachers with ideas in the pursuit of ways to exercise intelligent action. School experience, at least as students see it, is failing to provide what they need most—meaningful human encounter. When they speak of participation, they are not referring to

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Portions of this paper were first presented at "Toward Significant Living," the 34th Educational Conference of the Educational Records Bureau, October 1969.

superficial, Mickey Mouse activity; they ask for continuing involvement in the decisions which affect not only the kind of learning they need but also the kind of person they aspire to become" (*1*).

From the viewpoint of the educator principally concerned with reading or the total communication process, relevance and meaningfulness are vital considerations. Excellence in the teaching or learning of communication skills has ineffective results when applied to the content of a curriculum alien to the student.

Curriculum change must be a concern of the reading or communications specialist. The suggestions which follow are based on such a premise.

A Broader Base

We have much more information about language today than in the past; it is time to stop using materials and techniques based on fallacious reasoning or extremely limited knowledge. Granted, it is only within the past thirty years that we have been able to describe language in organized fashion. But we now need to capitalize on knowledge about language.

We must study our language before we generate approaches to reading instruction. Too many teachers have been trained to use prescriptions and know little about their own language. Such generalizations as "when two vowels go walking, the first one does the talking" are limited in nature and are unreliable as word attack strategies. We need to learn more about the patterns of specific letters in words, sentence patterns, and the overall organizational patterns of our language. Eventually we may have enough information about language and the learners of language to formulate sets of generalizations of utility to different types of learners.

In all probability we will help many learners, particularly the so-called *disadvantaged,* by de-emphasizing individual sight words and emphasizing strategies of tackling new words in contextual situations. The learner already knows much about language, whatever his background. He brings this background to a reading program. When we rely on word lists in reading and spelling and do not carefully consider the whole contextual environment, we act as if we feel

the learner knows nothing about his language. We need to reanalyze our dedication to word lists. Probably, teaching reading and spelling through word lists contributes little to the language success of the student, and particularly the student who is having trouble.

We must also study the environment of the learner. There is no such thing as one way of speaking English. There are probably many learners who have been defeated by having teachers say to them, "This is not right; you've got to say it correctly!" Some educators confuse oral language and written language. To say, "You've got to speak correctly in order to read properly," is not necessarily valid.

The learner comes to the classroom from his own environment. If the teacher says to this learner, "You are wrong—you are speaking incorrectly," the teacher is in reality saying, "I don't like you; I don't like your parents; I don't like the environment from which you come."

And, then sometimes, injury is added to insult by the introduction of sight words meaningless to the child or by the introduction of a basal reader with carefully controlled language artificial to the beholder. Such basals may be traditional basals or those basals called linguistic readers which, in the main, present carefully controlled graphemes. If reading instruction is to be considered on a broader base, the language experience approach for beginning readers, whether five or fifty, seems desirable; it makes sense to start with the language and the experiences of learners and build the reading program out of this foundation until learners are capable, psychologically and linguistically, of coping with the different types of language usage they meet in some books.

Written language is not always oral language written down. There is a tremendous difference between what students meet on the printed page in most of the materials confronting them and what they are saying within their own peer and family environments. We must concentrate on language development first. We must, perhaps, for some youngsters coming into nursery schools and kindergartens, dispense with reading materials. Perhaps these children are threatened by books being pushed at them. Perhaps books should not be brought into the classroom (other than the single book the teacher is reading to the group at the time) until the children are able to cope

with different kinds of English language which may be spoken under different sets of circumstances. Then, perhaps, such youngsters will approach reading as a new and useful experience.

Further, we must distinguish between oral and silent reading. When a student reads orally, unless in a testing situation, he is normally reinterpreting what has been read silently. He needs to pronounce each word, but not necessarily exactly as the teacher does. The student needs to pronounce in a manner similar enough to those listening so the message is understood. In silent reading, a student is carrying on a dialog e with the author; there is no need to pronounce each word "correctly" or even (perhaps) to pronounce at all.

Individual Needs

We are beginning to move away from the three-group approach as *the* method of teaching reading. Certainly there are many problems inherent in the teacher's attempting to cope with thirty, thirty-five, or forty individuals in one classroom, and, granted, there are compromises the teacher must make as he strives to meet individual needs. But, the teacher still has the obligation of meeting those individual needs to the best of his ability. It can't be done with just a stereotyped three group approach. It can't be done, certainly, at the high school level with a single-group approach without any differentiation of assignments and by using materials wholly inadequate for the students. It's about time (and things are stirring) that high schools wake up to their responsibilities and adjust methodology and materials to the varied needs of the learners—ego-wise, work-wise, society-wise, and interest-wise.

We have gone on the assumption too long that transfer of learning takes place automatically. And yet there exists a host of psychological studies which tell us that one must teach very carefully to get transfer of learning, that one must make the follow-up situation as parallel to the initial teaching situation as possible for the average student to transfer, and that one must direct this transfer. Yet we continue with separate reading teachers and reading clinics, dichotomous from the rest of the program in the school.

We have not been making enough contact with the types of

materials and experiences the student faces in his environment in the classroom or outside of it. Our reading programs have concentrated largely on literature and narrative-type reading tasks. The program needs to expand to direct concern with the reading tasks demanded of expository materials. Patterns of writing and, indeed, reading tasks differ within a discipline and from discipline to discipline, and students need direct help in making the transfer.

Communication Services

Total communication services dealing with all media are beginning to be developed throughout schools and school systems. These multimedia networks will provide every possible type of communication device that can be used, sometimes replacing and often augmenting printed materials. The school or school system needs a vital instructional communications center handled by a capable team of workers experienced in library science, audiovisual materials, and communications.

There also ought to be, in the school or school system, a center for the preparation of materials, staffed by personnel trained to prepare materials suited to individual needs as requested by teachers. It will never be possible for any commercial enterprise to provide every type of material that is needed in the classroom, although some school systems might cooperate with commercial enterprises in such ventures.

Community members, staffs of educational organizations, and members of business enterprises should combine in an effort to construct effective evaluation devices. Our standardized tests do not measure adequate samples of realistic reading behavior. Our informal devices suffer from low reliability. We need master thinkers—teachers, writers, technicians—to develop computer programs and to provide the knowledge to utilize the host of equipment available for the development of evaluation programs.

Patterns for Change

Differentiated instructional personnel. Teams of differentiated instructional personnel, planning and working together, appear to

offer the best chances of success for constructing a meaningful and relevant curriculum suited to the individual and group needs of our students. Such teams should be composed of fully trained teachers, adolescents, and adults with varying abilities and levels of educational achievement, as well as representation from the student group itself. Many part-time helpers with a diversity of backgrounds may also be members of a team. Opportunities need to be developed so that all members of the team may have the opportunity to upgrade themselves educationally. Such upgrading programs need to be joint endeavors with colleges and universities which are willing to cooperate in providing learning situations at a variety of educational levels. It may be that team membership will provide the best training ground for the development of master teachers.

Team planning followed by cooperative implementation makes it very difficult to fragment instruction in reading, listening, or spelling.

Teacher education. In helping ourselves contend with the complex needs of our society, we must also provide other patterns of training for educational personnel. We need a training continuum from preservice education through inservice education. The university professor needs help from the school practitioner. The professor may (we hope) visit classrooms; but, even so, such experiences are very different from being in a classroom day after day. Public and private school staff members must provide consultative help to the college program so that the professor may revise his reading methods course in line with the needs of today's society. But also within the school setting, inservice courses must change from lectures on reading instruction to the reality of contending with the reading and other communication needs of the students. Inservice programs should focus on specific problems such as, "How can you help a student learn to draw conclusions from what he reads in his difficult social studies textbook?" or "Can the language experience approach be used in a continuing class discussion of the Vietnam war?" or "How do you evaluate the reading skills needed in coping with science materials?"

Courses, programs, sessions, or whatever might be considered teacher-education activities need to operate from developed or devel-

oping conceptual frameworks, but the activities must be pragmatic. Behaviors are rarely changed by talking about something. Leaders or coordinators of training programs should make every effort to tailor such programs to the individual needs of prospective teachers or teachers in service. Instruction should be organized for small groups or individuals whenever feasible so actual involvement may take place. It is, in reality, more economical for the instructor to repeat procedures with a number of individuals or small groups at the involvement level than to "expose" a large group to concepts at a "talking" level.

Research activities. Although there will always be a need for individual, creative investigations, most research effort should converge on significant problems which must be solved. Young researchers must be effectively trained, without keeping them in limbo as perennial students. Research training should start early enough in the career of the graduate student to make him comfortable and competent in reading research reports and in handling parts of research designs long before he begins his own dissertation. If we can turn out young researchers rapidly enough who enjoy engaging in research, perhaps they will continue to serve the educational community as investigators.

The new breed of researchers should be trained to work cooperatively on large, significant problems and should be at home in both the university and the school. Cooperative effort, sometimes including industry, may help close the gap between research findings and practice. Although we need to collaborate on large, important problems, we must not just concentrate on medians and products but also look carefully at individuals within the treatment and nontreatment groups to gain insights about individual modes of learning and about the *process* of reading.

Research should also be specifically focused on the interrelationships among communication skills, as well as the functioning of these interrelationships within the disciplines represented in a curriculum. Too much of what we now accept about such interrelationships as fact is hardly based on well-designed study.

Certainly we must also aid investigations concerned with teacher effectiveness since the teacher appears to emerge as a significant

factor in most research reports. Teacher-effectiveness studies may well be the types of investigations which lend themselves to cooperative research involving university and school personnel.

Concluding Remarks

Within the next decade the institution we now call "school" may change radically; it may even find its role in this complex society. Reading will not be the dominant learning mode for many but, however, will have relative degrees of significance for others. We must keep marching with the changing needs of society. We need to discover how to help students learn to skillfully use all aspects of the communication processes, with emphasis on individual and specific group needs. But we must learn also how to help students perceive such activity as meaningful and relevant.

Most students are not interested and can see little value in learning outcomes such as how to find a main idea, how to pronounce a digraph, how to read in sequence, or how to make an inference. There are two large curriculum areas of concern to learners: first and foremost, probing into and evaluating problems, interests, and needs of concern to learners in this present society; second, investigating ideas and information about events, phenomena, and living organisms which relate to the learner's world.

Hence, reading instruction—in fact, all communication skills instruction—has to be subsumed by ideas. Communication skills are means to ends, not ends in themselves.

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The Quest for Maturity in Reading

Russell G. Stauffer
University of Delaware

WHEN CIRCUMSTANCES required that I put my thoughts in order according to the topic I had proposed, I realized how grandiose an ambition I had entertained. The boldness of my venture was prompted by the fact that I had disciplined my thoughts and actions sufficiently to prepare two texts on the teaching of reading as a thinking process. Now, though, when I wished to provide a kind of first-order overview of the developmental skills needed to do critical, creative, versatile reading of the highest order, I understood more clearly than ever that investigations concerning the ontogenetic development of reading-thinking behavior were nonexistent.

Overawed, but undaunted, I realized that in good part I did know my way around the surface contours of the psychological domain of reading and thereby might provide grist for a developmental genre. If reading of a scholarly kind is akin to thinking or reasoning, problem solving, and understanding, then some legitimate inferring can be done from studies of cognitive, psycholinguistic, and social-cognitive development. Also, of importance, are the heightened intuitive sensitivities and deductions or good guesses that can be made from my years of classroom and clinic experience. The task I have set for myself is too broad, but unavoidably so, because the question before us will suffer distortion if the perspective is reduced. Maybe, though, I can refresh the debate with speculation about what is possible.

The Nature of the Quest

What is the nature of cognitive adaptation or intellectual functioning whereby reading is the means to an end? Undoubtedly it is similar to the functioning essential to the use of oral language and the evolution of symbolic behavior. A look at developmental repre-

sentation, particularly oral language, may help us better understand the intellectual functioning needed to deal with printed symbols. It will be apparent as I proceed that I lean heavily on such contemporary intellectual giants as Piaget and some of his translators (*2, 5, 6, 8, 9, 10*).

In the sensori-motor stage the infant learns to manage his immediate enviroment with a considerable amount of skill and orderliness. Most of this is limited to nonsymbolic and mute overt performances dependent on sensori-motor actions. Through innumerable ventures and adventures the infant begins to see things relate to other things and to see intentions relate to goals. Gradually the ability to symbolize or use the reference behavior of language emerges and marks the beginning of the long and tortuous development of language as the principle instrument of cognition. Even so, overt actions and imagery (representing ikons) serve continuously in the evolution of the intellect. These tools of the culture—actions, images (pictures and diagrams), and symbols of which the prototype is language—are ways of reckoning and ordering and empowering the mind.

Representational intelligence, because of its symbolic function, is much faster and more mobile than sensori-motor intelligence. Piaget likens the latter to a slow-motion film which represents one static frame after another, whereas the former through its mobility can give simultaneous and all-encompassing presentations (*5*). Thus, language can help us recall the past, represent the present, and anticipate the future in a brief and organized act. Second, representational thought rather than limit representation to empirical successes and failures permits one to reflect on acts and their organization and also permits one to give thought to syntax and the formation and transformation of sentences. Third, it can extend its scope to symbolic manipulations that are completely logical in nature, as in science and mathematics. And, fourth, through the medium of a system of codified symbols conceptual intelligence can and does become socialized and permit sharing with a whole culture. Thus, the range of man's representational thought can be estimated best through a consideration of the means by which a culture provides for empowering the mind (*1*).

The idea of thought or cognition as an active, organized affair

involving multiple interrelationships among cognitive actions and among concepts and meanings underscores the importance of the long-enduring hardship a child encounters in his effort to cognize the world symbolically. Piaget describes these encounters as the assimilation-accommodation functioning of adaptation. This is the process whereby an individual fits or assimilates or comes to grips with the special properties of the thing apprehended and accommodates, or reorganizes or alters himself to the requirements or demands which are imposed upon him. Piaget goes on to say that an intellectual act of assimilation and accommodation by virtue of its dynamic aspect is characterized by a balance or equilibrium which constitutes intellectual adaptation. Thus, to truly assimilate an event one must also at the same time accommodate to it. This results in a continuous process of internal renovation or alteration or of adapting the old to the new.

All this cognitive commerce suggests a second major function in that for adaptation to occur an underlying intellectual organization must exist. Flavell quotes Piaget as saying that "assimilation is hence the very functioning of the system of which organization is the structural aspect" (*5*). Thus, both organization and adaptation, resulting in reorganization, make possible a progressive intellectual penetration into the nature of things and do so in such a way that any given change is never too drastic.

Although the nature of cognitive changes differs sharply from stage to stage in development, there exist certain properties that are independent of stages. For instance, an act of intelligence whether it be a simple act of adjustment in the sensori-motor period or a complex logical act in the adult stage is always a part of a system or totality. In addition, acts of intelligence are organized in terms of means to ends and possess a certain cognitive finalism. As Flavell puts it, "Development itself, then, constitutes a totality with a goal or ideal subordinating means" (*5*).

This brief accounting of the special features of symbolic functioning and intellectual development charts the form and direction that extend through adulthood and the prospect of attaining the upper limits of cognition. The area of language and communication provides the vehicle whereby thought can become socialized and

logical. Stage by stage the individual learns to accommodate to the new by assimilating it to the old in a coherent and rational way. Gradually he becomes the master of change through a stable, enduring, flexible, mobile, and internally consistent cognitive organization whereby he orders, relates, corrects for distortions, and makes coherent the world around him. At the same time he learns to keep his premises unaltered during a reasoning sequence as he pursues a goal-directed, systematized kind of (reading) thinking.

The Quest for What?

Reading is a way of getting to know through imagery (and those ikon products that provide "stop action" representation worthy in many instances of the richness of a thousand words) and of getting to know through language with its syntax and semantics. Thereby, reading enables the reader to form powerful combinations of ideas. Both (illustrations and words) provide a means of representing not only what exists but also representing what might or might not exist. The developmental evolution of the cognitive skills needed to acquire the conceptual wherewithal to foster cognitive-affective adaptations through reading may most likely be accomplished by applying Piaget's equilibration model whereby an *active* engagement with reading content leads to *change*.

In this regard Flavell provides a marvelous generic image of a concrete-operation-stage child that seems useful here. ". . . a child for whom the world is beginning to stand still and stay put, a world which, like the child himself, knows something of law and order, and above all a world in which thought really counts for something, in which thought can be a more trustworthy guide to action than perception" (5). From this foundation, to the stage where logical and empirical-scientific reasoning function, constitutes the end product of cognitive functioning. Piaget has succeeded very well in conveying a constructive yet continuous character of intellectual development. In his analysis, the concept of equilibration seems basic to the intellectual tasks performed upon the raw data of experience.

The process of intellectual development can be viewed as an organization process whereby a succession of structures comes into

equilibrium, with the form of equilibration varying from structure to structure. Thus, the earlier structures transform and become integrated into better equilibrate ones at succeeding levels.

Flavell uses a conservation problem to provide a simplified account of how equilibration is applied. In so doing he describes Piaget's four-step probabilistic model by means of the concept of invariance. Both concepts, *equilibration* and *invariance,* appear to be fundamental.

In the process of equilibration of cognitive actions, each of the four steps represents an isolable "moment" in the behavioral strategy. A subject is shown a succession of change-of-shape transformations of a ball of clay and each time is questioned as to conservation versus nonconservation. In step one the subject attends in a static and deforming way only to width or only to length, but not both. In step two a beginning decentration begins through a series of alternations between length and width, but the centrations are always successive and isolated and never coordinated. In step three hesitation and conflict occur as the subject begins to apprehend the distinctions of properties of width and length in a semireversible way. This cognitive conjunction leads to step four whereby it is recognized that each change in length is accompanied by a change of width. Stated differently, there occurs ". . . a shift of conceptual focus from *states* alone to the *transformations* which lead from state to state," (*5*) or from attention to *facts* to attention to *processes.* Thus, the progressive shift of focus increases not only the size of the field but also its mobility until through the permanent reversible compensations a new stability is attained. This is why the concept of reversibility is referred to by Piaget as *the* core property of cognition springing from a coherent and intercoordinated system of actions.

Furthermore, each act of equilibration involves cognitive and affective regulation which Hunt terms its motivational aspect (*8*). Within the individual this aspect of regulation is based on interest and effort and the like. Externally it is based on the values attached to the solutions sought in an endless variety of goal-directed activities. These effects stem largely from efforts at communication.

In addition, concepts of order in psychological development seem suggestive about maturation and standards of conduct. Not only

is there the principal of predeterminism (genes) but also that which emerges out of successively organized new and more comprehensive systems as well as the increasing duration of persistence that grows out of encounters with persons, places, and things (*8*).

By invariance the child also learns that there is a constancy to the amount of clay that persists across change in appearance as well as a constancy about states and resulting transformations of shape. Thus, in the process of mastering *invariance* the child is constructing *yardsticks* or *truths* which permit him to deal more effectively with the increasing complexities of the world by dealing not only with surface facts and figures but also with groupings and categories. He deals not only with the invariant attributes of identity of objects but also with the changes that may occur by the action one takes toward the objects. As he travels the road of decentration he also travels the road from egocentrism to sociocentrism, from overt to covert action, and back and forth along the convergent-divergent thinking route. Also, as children travel the cognitive-affective developmental road, they build the concepts and processess with which to organize the world encountered. It is our responsibility to develop sound economical techniques of instructing that are based heavily on equilibration, feedback, and invariance rather than on haphazard individual schemes or on rote memorization.

Psycholinguistic and Social-Cognitive Considerations

Flavell and Wohlwill (*6*) present some tentative ideas and opinions regarding the nature of cognitive development that seem relevant here. Their opinions are distillates from recent literature on cognition and language, particularly the seminal work of Piaget.

Prior to the present decade, language development was seen as a gradual but uniform process of approximating adult phonology, vocabulary, and sentences and doing so on a word-by-word basis. Chomsky's "output and process" model provided a radically different set of rules to generate the infinite number of grammatical sentences possible and is referred to as a measure of a person's linguistic "competence." It also provided a competence model to represent the psychological operations involved in the processing and interpreting

of language. The model for the acquisition of language says that an infant is endowed with innate "linguistic universals" that all languages have in common (*3*). Thus, the search for language structure is an active process of hypothesizing, testing, and confirming or rejecting utilized in real situations and within the constraints of memory and rate under which humans operate. This model essentially rejects an accretional, quantitative one of acquiring vocabulary on a word-by-word basis or producing sentences on a one-word, two-word basis. The nature of development is determined by what gets input from the environment and by having the input dealt with intelligently. It is this distinction that is useful in thinking about cognitive development and may result in new and fruitful ways of looking at traditional reading problems.

Flavell and Wohlwill go on to provide a crude taxonomy of developmental outputs. Of first order importance is a child's "stored information" about self and world. Included here are such concepts as object permanence, class, relation, appearance-reality distinction, logical implication, noncontradiction, and proof. Also specified is the way in which a child's information is represented and organized. Included under representation are such distinctions as Piaget's sensorimotor and symbolic modes and Bruner's enactive, ikonic, and symbolic forms. Under organization there is Piaget's structured model showing how elements may be related at different levels of development. Finally, the taxonomy provides an accounting of a child's procedures for extracting, processing, and utilizing information by means of such skills as ". . . ability to deploy and maintain selective attention, to organize perceptual elements into suitable form, to transport information (and just the right information) to and from memory storage in an efficient fashion, and so on" (*6*).

In a recent publication (*The Development of Role-Taking and Communication Skills in Children,* J. Wiley and Sons, 1968), Flavell et al report and interpret a series of developmental-descriptive studies dealing with aspects of the evolution of role-taking behavior. In brief, the report is concerned with thinking about the social environment. They studied the sort of social-cognitive activities that permit an individual to make good inferences about what is going on inside others so as to understand, predict, and control interactions

with them. Their research strategy followed three steps: first, to try to construct a generalized picture of what role-taking and verbal communication skills might entail; second, to differentiate more specific subskills; third, to develop tasks that would be appropriate measures of the skills.

It was assumed in the study that role-taking activity served as a means to some end and that there were five major things an individual needed to know to achieve an end: *Existence,* or that what one individual perceives, thinks, or feels in a situation may be apprehended differently by another; *Need,* that certain situations require an individual to understand and act on the fact that another's point of view may differ from one's own; *Prediction,* or the process of making guesses with some accuracy about what the pertinent role attributes are in a given situation; *Maintenance,* or the ability to establish and maintain one's own and another's point of view in dynamic equilibrium; *Application,* or knowing how to apply what one knows about another's role attributes in a communication task.

The authors wisely caution the reader against over-literal and simplistic interpretations of some of the assertions they make, a caution that must also be exercised here. They speculated that by the time a child enters school he is capable of some elementary inferences about what others perceive and that he has some *prediction* skills providing the task specifically requires an analysis of another's point of view. In middle childhood and adolescence an individual becomes increasingly aware of the need to pay careful attention to the characteristics of an audience when communicating. Ontogenetic changes reflected advances in understanding. When speculating as to whether the study of children in daily-living confrontations would make the children appear inferior in communicative skills when compared to their elders, the authors add another word of caution by saying that they doubt it. In everyday interchanges a child typically sets his communication ends in rough correspondence with his capabilities.

Thus in brief, both psycholinguistic and social-cognitive considerations suggest quite clearly that the search for structure in these domains is also an *active* process. As in the search for cognitive development, haphazard individual schemes can be augmented by sound economical techniques acquired through instruction. The

instruction to be effective must utilize real situations and require hypothesizing, testing, and confirming or rejecting.

The End Product

Crucial about the comprehensive cognitive development described thus far is an active search that is made most functional through sound economical means. Similarly, skill in critical, creative, and versatile reading needs be an *active* search that results in *change* accomplished through sound economical means. Sound instruction from the very beginning must operate on the premise that reading speaks directly to the reader in a communication act similar to oral communication. It is not an accretional quantitative one of memorizing letter names and sounds or of producing sentences on a one-word, two-word, etc., basis. Neither is it ". . . a mere intellectual exercise of grasping and remembering meanings" (7). From the very beginning, sound reading instruction can inspire a reader, give him feelings of pleasure and satisfaction, and exert a conscious integrative effect upon him. The crucial point along the road to maturity occurs when reading instruction is first begun, and it does not occur as Gray and Rogers say after one has first dealt with reading as a "mere intellectual exercise." The "reading-growing-reading-growing process" is a self-generating process that varies in degree and kind from the very beginning. When reading instruction is directed as a thinking process, it provides new and improved ways of thinking about things; and the crucial point in the life of a reader is reached long before he reaches the classics.

Briefly and concisely it might be said that critical reading like critical thinking requires cognitive interaction between facts and values and hypotheses and proofs and results in internalization of knowledge and self-regulation. At the highest maturity level or at the highest level of conceptual and structural complexity, the reader uses the tools of his culture (actions, images, and symbols) in a fast, mobile, and efficient way. He progresses developmentally through numerous reading ventures whereby he *acts* upon his interests and motives and *interacts* with the reading content always seeking (*change*) answers of some kind. The representational intelligence,

which permitted him even at the sensorimotor level to relate to other things and see intentions related to goals, progressively permits him through reading to reflect on acts and their organization, to extend its scope to symbolic manipulations that are logical in nature as in science and mathematics, and to travel the road from egocentrism to sociocentrism.

Critical reading like critical thinking is a process, a means of making judgments based on values and a choice of the relevant. To make decisions and deal with alternatives require mental discipline. In essence, the dimensions of critical (creative and versatile) reading are ability to actualize concepts and intentions; ability to sift information and determine its relevancy to one's anticipations as well as to actively follow an author's intentions and fidelity; ability to deal with constraints and invariants in terms of goals being sought; ability to maintain in dynamic equilibrium the personal components of convictions and inclinations; ability to accept responsibilities involving choice and volition among different options and exercised on the basis of consequence; and ability to internalize the knowledge gained and use it in other situations.

Since the instructional environment can play a large role in the acquisition and exercise of critical reading abilities as just declared, it is essential that instructional environments and materials be designed to provide conditions for enlarging as much as possible on the nature and range of choices and decision making. This requirement demands a quality and variety of opportunities that grow out of cognitive interactions and social communication in a progressively unfolding way. The most damning statement that can be made about reading instruction as presently practiced is that by and large it ignores what Pulitzer Prize winner Renè Dubos refers to as the most important phenomena of human life: "The ability to choose among ideas and possible courses of action may be the most important of all human attributes; it has probably been and still is a crucial determinant of human evolution" (*4*). He goes on to say that the religious philosopher Paul Tillich (1886-1965) spoke of man as becoming really *human only* at a time of decision, when he exercised free will. Furthermore, the expression of free will always involves value judgments and anticipates the future.

It is generally agreed that Rosseau wrote *Emile* because he was opposed to rote teaching methods that prevented a child from thinking and judging for himself. Education, and in turn reading instruction in all areas of knowledge, should be a happy process of learning and freely developing one's capacity for thoughtful action and zestful living to the fullest. It should be, as Rosseau said, the "art of training men" of the awareness of the growing body to health, of the character to morality, of the mind to intelligence, and of feelings to self-control, sociability, and happiness.

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Objectives of Language Arts Instruction Reflected Through Recent Research

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RESEARCH IN EDUCATION grows out of a continuing concern for improving the quality of education. The quality of education at any given time is based partly upon facts and partly upon theories. Research, then, either extends what is already known or attempts to establish theory as fact.

Hogan (*6*) discusses "fermentation" in the teaching of English and language arts as compared with "revolution" in the teaching of science, mathematics, and modern foreign languages. Fermentation is a more appropriate description of the status of language arts than revolution because concerns have been more at the level of research and theory than at the level of undisputed facts. The purpose of this paper is to examine recent research in the language arts to see if reported research does in fact reflect the various accounts of what major objectives ought to be. Certainly, teachers' knowing that what they are being told to emphasize is reinforced by research and becoming aware of some of the means by which these conclusions are arrived at should be of value in developing confidence in an instructional program. An examination of recent research should have the added value of pinpointing specific trends which aid a teacher in working within the broad objectives. The sequence for discussion will be as follows: 1) identification of broad objectives, 2) samples of recent research which tend to support these objectives, and 3) implications for classroom teaching which this research offers.

There is surprising consistency in the literature in statements of major objectives in the teaching of language arts. Representative statements are found in LeFevre's *Linguistics, English and the Language Arts*. LeFevre (*8*) presents the following as broad teaching objectives: 1) a continuous spiral program indicating the need for sequence and articulation in the instruction of speaking, listening,

writing, and reading; 2) the development of the student's conscious knowledge of and insight into the nature of language; 3) the development of the student's understanding of the interconnections and interrelationships between oral and written language; 4) an interdisciplinary approach to the study of language so that the study of language becomes functional in terms of human concerns and activities; and 5) the development of the student's capacity for independent inquiry and study.

A Continuous Spiral Program-Sequence and Articulation

Blake and Amato (*2*) point out that research in speaking has received the least attention of all the language arts areas but note that the greatest needs in this area are guidance and consensus on what speaking skills are needed and the sequential order in the development of these skills. Denley (*4*) reports some specific research which reflects attempts to close this gap. One of the studies included in his report was designed to see if children in Head Start programs exhibited language development superior to non-Head Start participants, and it was concluded that the former did. The implication might be drawn that early emphasis upon freedom of oral expression and concept extension paves the way for a more formal study of oral communication later.

Another study in Denley's report indicated that children who were taught how sounds are formed with the oral mechanism at the same time they are being taught letters and sounds did improve their general speech proficiency. This study indicates that increased understanding at the conscious level of speech phenomena can effectively be a part of the instructional program at a much earlier age than was once believed and that conscious evaluation of what happens when one talks should not necessarily be restricted to those with speech defects.

Still another study reported by Denley found no relationship between the degree of speech (stage) fright of elementary children and their speech ability and speech readiness. This study implies that there are many variables in the production of effective oral communication which can be singled out as important parts of the

overall program in speech development. Regardless of whether stage fright really affects speech ability, it is a factor of interest to children and could be discussed with them as the teacher helps to increase understanding of speech situations. Hopefully, individual studies such as these will eventually enable teachers to pinpoint the factors involved in speech development and bring about more consensus as to what should be dealt with in the instructional program and when.

Developing Insight into the Nature of Language

Linguistic scientists have provided educators with facts about how American English works. Linguists have shown educators that language skills can be more effectively developed with children if children learn at the conscious level some of these facts. In this period of the "fermentation" of language arts teaching, research is attempting to point the way for effective methods and approaches for incorporating these facts into the language instructional program. Dominant among the studies designed to do this are the areas of teaching grammar and spelling.

A typical research study is one done by O'Donnell et al. in which an analysis of speech and writing samples of children in grades three, five, and seven was made to determine 1) the types of sentence-combining transformations (converting a pair of sentences into a single sentence by embedding one in the other, an alteration which obviously increases the information load contained in a grouping of words) 2) average number of sentences combining transformations per terminal syntactic unit; 3) average length of minimal terminable syntactic units; and 4) various patterns of main clauses (subject-verb, subject-verb-object, subject-verb-predicate noun). The findings of this study included the following: 1) the length of terminable units was greater in oral expression than in writing for grade three but greater in writing in grades five and seven; however, differences were not significant; 2) the number of transformations per unit was significantly greater in written than oral language for grades five and seven; 3) the length of terminable units and transformations per unit increased significantly with grade level, and 4) subject-verb-object type of clauses occurred more frequently in writing than in speech; subject-

verb-complement (noun) occurred more frequently in speech than in writing, but the adjective complement occurred more frequently in writing than in speech. This study reflected no clear or consistent pattern of sex differences. Boys seem to reflect structural complexity more than girls; thus, there is no evidence that girls show overall superiority to boys in complexity of grammatical structure.

Bashaw and Anderson (*1*) did a study on the development of meaning of certain adverbial modifiers (slightly, rather, pretty, very, quite, extremely, unusually) in grades one through college. They found the stability of meaning surprisingly high and expressed a need for study of other word types and how usage and meanings of words change with age and training.

Working on the premise that spelling is, in part, a rapid decision-making process with choice among alternatives determined by cues imbedded in the structure of the language itself (e.g., highly improbable letter combinations would be rejected in favor of highly probable ones), Klein and Schneider (*7*) did a study with good and poor spellers in the fifth and eighth grades. The subjects were required to choose that member of a pair of nonsense words that looked most like a "real English word." Five-letter nonsense words representing four orders of approximation to English were constructed. The words were arranged in pairs to form choice-discrimination problems. In general, the finding was that good spellers proved superior at both levels. Interestingly, the difference between good and bad spellers was most apparent on choices of moderate difficulty rather than at the two extremes. A question suggested for further study was "Can poor spellers be trained to utilize letter sequential probabilities to the extent that such training will yield transfer to the ability to spell actual English words?" The implication for classroom teachers of these kinds of research studies is that as we find out more about the vocabulary development and the conceptual load centered upon facts about the structure of language which can be expected of children at various ages, grade placement and individual instruction can be approached with more confidence. Certainly, research indicates that increased understanding of how language works is not only an added incentive to learn more but enables a youngster to handle his use of language more efficiently.

Everywhere we turn today, we find expressions of the desire for teachers to emphasize more insight into language and to help children develop a real feeling for their own language. The teacher's responsibility is to help children become good observers of how language works.

Interrelationships among Language Learnings

The idea of similar skills being needed for listening, speaking, reading, and writing (organization, distinguishing between main ideas and details, etc.) and the interdependence of various areas (listening, reading-INTAKE; speaking, writing-OUTPUT) has been an area for speculation and research in recent years. Especially in the areas of listening and reading, since both are receptive communication skills, there has been a number of studies to determine the relationship in development.

Weintraub gives a comprehensive review of the arguments concerning similarities and differences between these two areas. Studies designed to determine the degree of relationship between scores on standardized listening and reading tests as well as studies to determine if there are distinct listening factors (such as the presence or absence of a speaker), the credibility of the initiator of the communication, and social class differences are reported by Weintraub (*13*). A number of other studies connecting listening skills and reading skills has been reported more recently by Denley (*5*).

The relationship of speech development and reading achievement has also been studied. Sonenberg and Glass (*12*) have reported a study designed to test the correlation between functional articulatory speech defects and reading ability. They concluded that the sounds which the subjects had the most difficulty with in articulating accurately were for the most part included among those sounds which gave the same subjects difficulty in auditory discrimination, a factor essential to a phonics program in reading.

Studies of the relationship of skills in the language arts are not new. Ruddell (*11*) reports a study as far back as 1941 in which the correlation between the ability to understand the structure of sentences and reading achievement was tested. Important in this

category is the implication that teaching should consciously stress the carryover value of the learning of one skill to other areas of the language arts; and continued research, pointed to writing and reading, speaking and listening, and the many possible combinations of subskills within these areas, will extend the guidance which teachers will have available for improving transfer of knowledge from one phase of study to another.

A typical study centered upon a specific skill which is needed in the learning of a variety of different areas reflects the need for teachers to be concerned about the way that children organize material for learning. The study, by Levin and Rohwer (*9*), has implications for the way that materials are presented to children in grammar, spelling, and vocabulary extension exercises. Fourth and fifth graders were required to learn a fourteen-serial list in either traditional (in the context of unrelated individual phrases where the last word in each phrase was the one to be learned; the grey *cat*, we jumped the *log*, I crossed the *street*, you find the *bowl*) or in the context of a single, continuous sentence (the grey *cat* jumped over the *log* and crossed the street to find the bowl). The conclusion was that provision of an organizational pattern in which there was continuity of thought facilitates learning.

Functional Learning

Ever since John Dewey much has been said about making learning meaningful to children. Most of our language arts textbooks reflect attempts to clothe individual lessons in the garments of reality—in short, to tie learning to the experiences children have already had or will encounter in their daily life experiences.

In a summary of recent research in listening, Denley (*5*) describes a comparison of the experience approach (using language and experiences of children as the basis) and the traditional method (teaching reading, writing, listening, and speaking separately with instructional materials supplied by the teacher). The th ory that learning centered around children's own experiences is much more meaningful to them and that children learn more as a result was supported by this study.

At times, in a review of research, the functional aspects of learning can be observed to be inherent in the study even though this may not be the primary focus of the study. In reporting a research study, Duffy (*3*) presents a quotation expressing the fact that our knowledge of children's writing is extremely limited: "Today's research in composition, taken as a whole, may be compared to chemical research as it emerged from the period of alchemy." Duffy developed an instrument for measuring the elements of poetry-writing performance. These elements were theme, organization, solving the problem/or ending the poem, stimulus perception, emotional depth, combining ideas and/or things in unusual relationships, and language (word choice). This instrument was used to evaluate poems from children in grades three, five, and seven. The hypothesis that these elements would reflect growth of verbal skills from grade to grade was supported. The necessity of making writing experiences functional or meaningful to children is reflected by the inclusion of the perceptual and emotional elements in the instrument.

Independent Inquiry and Study

Another cliché of our time is that children should be able to learn independently as well as in groups, primarily for the development of self-responsibility as well as for developing at their own rate. Another study reported in Denley's account (*5*) of research in listening compared recorded presentations and teacher-presented instruction. Even though in this particular study the results showed that both methods were equally effective as far as learning specific material was concerned, the implication is that individual study through programed materials and devices such as listening tapes can be as effective for some kinds of learning as the traditional teacher-pupil kind of interaction. There are indications that more and more similar materials and aids to learning will be utilized in the classroom as teachers reach out to encourage individual inquiry and study.

This paper was designed to examine recent research to find out if the majority of reported studies substantiates the broad objectives

of teaching language arts which are projected in the literature. The conclusion to be made from this examination is that recent research not only gives continued impetus to these broad objectives but is attempting to narrow the existing gap between what is meant by the objectives and the day-to-day classroom instruction. Valuable summaries of current research, such as those reported here, are becoming increasingly available to the classroom teacher, appear in easily interpreted form, and should aid the teacher to "ferment" clearly the direction of language learning today.

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Oral Language and Learning to Read

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THIS PAPER concerns three distinctions that need to be kept in mind when examining the relationship between the child's oral language behavior and his learning to read or decode print.

This paper first considers a theoretical viewpoint about how the child develops his perceptual system—that is, how he learns to see, to hear, to speak, and then to transfer these skills of hearing, seeing, and speaking to decoding print. The theories discussed in this paper are based on a cognitive-biological approach and are not all inclusive. The major attempt in this paper is to indicate a basic compatibility between the research findings in the fields of perception and cognition (thinking) and a theory of how reading skills are learned.

Second, the paper describes the relationship between a child's mastery of his early learnings and his later academic tasks, such as learning to read. In this section, the point of view will be maintained that from birth the child is in the process of creating his own learning through his active involvement with the environment. The term *active involvement* in this paper does not necessarily mean physical involvement; rather, it includes perceptual and cognitive involvement—or, more precisely, what is included in the process of thinking and ways of maintaining attention.

Third, this paper discusses research findings pertaining to the relationship between the child's oral language production and his reading behavior. What will be suggested is that there are two crucial factors in learning how to read: first, the child's ability to comprehend language and second, the child's experiential background. Any measure of a child's oral production is seen as a product of these two factors. In addition, it will be maintained that the teacher's ability to diagnose the child's level of cognitive and perceptual development is probably a more critical element in planning instruction than is a measure of the child's oral production.

Finally, data will be presented to support both the developmental point of view of language development and the point of view that the child reconstructs all sensory input. It will be maintained that it is the child who develops the strategies by which his own learning takes place. These data are based on studies done by the author with middle-class suburban children, rural poverty children, and inner-city black students. These studies support in part an additional hypothesis which states that it is the child's ability to understand the intent of instruction that is a critical element in achievement. That is, what the teacher plans can be seen as methods to assist the child in focusing on what is to be learned. According to this view, the teacher's role is perceived as planning instructional procedures to maximize the probability of involving the child cognitively. Stated more simply, the teacher becomes more concerned in planning, assessing, and evaluating ways in which a child will learn than in determining why he has not learned. An example may help. A second grade teacher in a lower middle school was presenting a lesson on word families (or spelling patterns) to her "slow group." She presented the word "old." A child in the class identified the word, and the teacher presented the letter "b." A child responded with the word "bold." The teacher then presented "c" and "f" with success and then the letter "g." There were no volunteers. She said, "Let's think, and I'll give you a hint." She pointed to her watch band, and an eager boy responded with the word "gold." She presented the next letter "h"; an eager little girl said, "I know, I know—*silver*."

This response puzzled both the teacher and her principal who was watching until it was suggested that the child was attempting to learn what she thought the teacher was presenting. The child really didn't understand the instruction; and when the word "gold" was given as a hint, the child revealed her lack of understanding of the intent of the lesson. Though she was listening, she didn't understand the intent. This "boner" is not an error or stupidity on the child's part but an example of the active mind of a child trying to create structure and knowledge based on her perceptual and thinking process.

The Theory

Most children learn to perceive and think in the same way. Teaching methods and curriculum materials are based on that assumption. When children do not perform according to normal expectations, teachers are confronted with a major problem in deciding how to present material to children. Too often, the alternative for the teacher is another set of material which may appear to be different but is basically built on the same average expectations about children's acquisition of perceptual and cognitive abilities. For example, if a teacher is using a look-say approach in teaching reading and a child experiences difficulty mastering the material, the teacher may turn to a phonics approach. It is my contention that most children will do as well in one system as the other. The basic question should not be an either/or type decision between different approaches built on the same underlying assumption. That is, for most normal six-year-olds, almost any of the known systems of teaching reading will do as well as any other if we look at mastery of graphemics (*6*). Both the phonetic and the look-say approach assume that the child has normal cognitive development, has adequate perceptual systems, has a fairly well-developed language system, and, most important, has learned how to master artificial symbol systems. Here an example might help. John was a black rural southern child whose speech appeared to be inarticulate and poorly developed. We saw John as having a language handicap. When John was asked to respond to the Peabody Language Development Kit, he named objects: *boy, window, bed.* He didn't respond more fully. His score was very low. John was a member of an experimental elementary poverty program where a great number of new innovations were being tried. Only one of those techniques will be used here as an example. Using the technique of having him dictate his own story in response to a picture he drew, we obtained the following:

I Saw an Indian Tent

It was not only one,
it was four.
And clouds were circling around the tents
and a bright shine.

The sun came out and the sky turned blue
with a yellow light in the sky.
One Indian said, "It is the sun that
is making yellow on the ground."

Later he dictated:

This is a mountain in San Francisco.
I saw some people swimming and a
little path leading high up in the mountain.
And the trees were shaking.
One tree was bent.
The other tree was straight.
They were some Christmas trees high up
in the mountain.
I saw them.
A little house made smoke and the
wind whirled by and made a wave
of the water.
And the trees did not look alike.
The sun came out and a bug came out
of the sand.

Then later:

I Saw a Stop Sign

I was walking up the blue grass and
it was some little girls walking up
the mountains.
And one little girl had a bag in her
hand with her lunch in it.
The other little girl had a lunch box.
He said to himself that I do not see
why they have things alike.
And the little boy thought to himself
that the stop sign's pole looked like
the words and he knew how to spell *stop*.

He know what it meaned.
Do not go across the street when cars come.

And he thought that the stop sign top
looked like the red light.
He knew what the red light meaned.
He knew what the green light meaned.
He knew what the yellow light meaned.
He knew how to spell stop:

S-T-O-P

And that is how.

John possessed a far greater facility with language than we could have assessed from the ITPA, the Peabody, or our own classroom observations. What we taught him was that his oral production was important in school, that words stood for things he had experienced, and later, as evidenced in the stop sign poem, that letters stood for words.

It may then be well to consider how normal children develop perceptual and thinking skills. There is ample evidence to suggest that children *learn* how to hear and that they learn how to hear before they learn how to speak (*5*). Piaget suggests that children learn through their own active involvement with the environment. In part, these learnings are a product of heredity; in part, they are dependent upon maturation of functions; and in part, they are dependent upon the environment. Environment is defined as the nature of the child-rearing practices, the economic level of the family, and nutrition. A critical addition to this list is the child's motivational system which propels him toward manipulating the environment through his perceptual systems. It is through the child's own active manipulation of the environment that what we call intelligence is developed. This motivational system is very close to what others have called curiosity, what White (*25*) has called "competence," or what Piaget means when he states, "In the last analysis, it is the need to grow, to assert oneself, to love, to be admired that constitutes the motive force of intelligence."

Prior to performance, the child has explored the stimulus perceptually (*1*, *13*), and learned to recognize and hear; or, for example, before the child can say a word, he must understand the word and ... ore he can grasp an object, he has recognized it can be

grasped. This point of view suggests that the child learns to perceive distinctive features of an object. For example, he learns to distinguish his mother's face and her voice from his father's face and voice and, further, to recognize variations in speech sounds of siblings and others. In general, development proceeds from a globally undifferentiated state (random, physical movement in motor development; babbling in language development). In addition, the child learns to categorize (dog), extract similarities (all dogs), subsumize narrow categories into more comprehensive ones (animals), and convert more comprehensive ones into specifics (poodle). This view suggests that learning is the growth in a child's ability to make finer and finer discriminations.

The early years of a child's life are composed not only of the more demonstrable physical attainments of sitting, walking, and running but also of the perceptual skills of learning the distinctive attributes of sounds in speech. This is a major attainment, for the child must distinguish speech of wide variations of the same word from speaker to speaker with added distinction made due to accent, intonation, speed, and volume.

In terms of total perceptual development, the child appears to search for regularities in spite of irrelevant differences. That is, the word or phrase is the same regardless of by whom or how it is presented. "I'm going," "I'm gonna," "I go," or "I done gone" are basically the same message. In essence, it is the content of the message that is involved in auditory perception rather than the child's own production or variant of what was produced. For example, the black inner-city child who, when asked to repeat the sentence, "I asked him if he did it, and he said he didn't do it," says, "I asks him did he did it, and he says he didn't do it," is, in terms of his own system, repeating the sentence correctly. He didn't change what is invariant in the sentence; that is, he retained the critical elements of the message. Perceptual development becomes less random and more specific; attention becomes more selective; the child is able to ignore irrelevancies and able to filter out extraneous inputs.

The child's perceptual ability to detect regularities in order and structure with the environment is basic for cognitive functioning. What the child appears to accomplish is, initially, the development

of basic thinking mechanisms based on physical-motor involvement (including hearing and seeing) and, secondly, the development of language. Language is thought to be subservient to cognition but later facilitates thinking. In the process, the child develops an internal structure with which he rehearses and reformulates *all* incoming messages, and his recall or memory is based on that system. That is, what is stored in the brain is what the child has structured, not a carbon copy of what has occurred. The accuracy of what the child stores is related to the biologic-experiential factors stated, but it is the child who must understand the information to be stored. If he does not, the information is not stored or "remembered" exactly as an outsider perceives it.

I believe this position accounts for a great deal of observed pupil behavior, as for example, the children's funny quips in response to meaningless material. The child's reconstruction of what he heard can only be understood in terms of the child's own structure. Some writers (*4*, *7*, *19*) suggest that any act of memory is actually the child's reconstruction of what he saw, felt, or heard.

Thus, the relationship of oral language and reading behavior can be reduced to two critical phases. First, to "learn" the relationship of spoken speech to the written symbol system the child must discover the regularities of print and come to develop a decoding system consistent with the code. Second, the child's previous ability to comprehend and decode speech auditorily is critical to decoding print. If he is to reconstruct print, he must be able to match the regularities of print with the regularities of his stored auditory perceptions; that is, he has to recognize the printed words as ones he already knows.

Oral language is important only in that it may reflect cognitive and perceptual mastery of language but is an insufficient and inaccurate predictor for many children of their capacity to learn how to read. What is important in learning how to read print are letter-sound relationships of reading and spelling patterns that transfer from word to word and across words which the child uses as "basics" to build his own structure of graphemics. The child's own motivational system is used to reduce uncertainties and discover the structure of the code. The elements of the structure that he discovers are related

but not completely dependent upon his total language development which may be reflected in his oral production. It is the teachers' skill in choosing the methodology or strategy that will assist the child in discovering the regularities that lead to the structure. It may be useful at this time to reflect on some prior research in the reading area as it relates to the issue.

Hall, (*8*) in his book *Silent Language* defines experience as something man projects upon the outside world as he gains in its culturally determined form. This definition is close to the position stated here; that is, the child is shaped by experience but constructs it himself. For example, a kindergarten child announced at dinner "tomorrow the principal is going to teach us how to make holes with fire." Based on his experience with tools, that is how the child interpreted the teacher's statement that the principal had told her they were to have a fire drill tomorrow. Russell (*22*) uses the example of the ease which second graders would have with the word "resuscitator" and the difficulty with the phrase "overcome with smoke."

The literature relating the importance of oral language is replete with examples of partial relationships. For example, Hildreth's 1964 summary indicates that

1. words children used in their own speech are easier to read in print than words they do not use;
2. the richness of the child's language is related to reading success;
3. deficient readers are deficient in oral language; and
4. speech defects are related to reading problems.

Kirk (*11*) suggests that a child cannot excel in reading without a good oral language foundation. Robinson (*21*), Milver (*17*), and others suggest that the critical skill to be mastered to insure reading success is the child's mastery and comprehension of sentences and phrases. Earlier it was demonstrated (*1, 2*) that children who had difficulty in either a linguistic reading program or a look-say program could be identified by speech ratings of spontaneous verbal fluency and articulation.

Birch and Belmont suggest that intermodal matching is the basic process involved in reading, that is, matching print with audi-

tory or spoken information. Other research has stressed the importance of visual modalities and motor patterns. The problem, as Pich points out, is that human characteristics are not independent of one another and each may be an important but not sufficient element in predicting success in reading. However, Gibson (*7*) has ably demonstrated that it is the rules of orthography and the rules for generating spelling patterns that carry over into reading. What is of equal importance is that a set to look for structure in a word can be developed and this problem-solving ability can transfer to new problems. Hertzig et al (*9*) suggest many economically deprived children have been trained to respond to cues that do not lead to school success.

In our work with poverty children we attempted to obtain a more accurate measure of the child's language capacity than is obtained using traditional means. We used a technique used by Baratz, Shuy and others (*3, 16, 23, 24*) in which the child is asked to repeat a sentence spoken to him. Earlier research (*12*) indicated that young children would make errors (or miscues) with elements of the sentence beyond their stage of language development. It was our hunch that inner-city black children, who have been described as possessing "language deficits," did not lack language but rather had mastered a variant of middle class English. It was predicted that when we asked these children to repeat standard sentences, they would reconstruct these sentences into their own language. This reconstruction on the part of the child would be taken as evidence both of the fact that economically deprived children do possess language but of a different type and that incoming auditory input is reconstructed by the child. We expected differences in rules used for verb declension, consonant cluster reduction, devoicing of word, pronominal opposition, and /r/ and /l/ deletions.

We found that these children, when asked to repeat the sentences, changed them to conform to their own variant. For "he'll be good" they repeated "he be good," or "her be good," or "she be good." For "We'll go to the zoo tomorrow" they tended to use "we go to the zoo tomorrow." Almost all miscues in the sentence of "Did the accident happen while your mother was in the store?" were in the changing of "while" to "when."

If their answers which maintained the meaning of the sentences were used as correct, the errors dropped considerably. We suspect that as teachers we have, as McNeil (*15*) suggests, focused on the peripheral aspects of language (phonology and morphology) rather than on semantics and syntax. That is, we have diagnosed and planned reading experiences based on the errors a child makes in pronunciation and articulation rather than on how well he maintains meaning and understands what is said.

Our evidence suggests that many children who possess poor language skills or are judged as having low ability actually display a capacity for apparent rapid thinking. For example, the child who, in response to "I asked him if he did it, and he said he didn't do it" says "I asks him did he did it, and he says he didn't did it" in less than a second's pause, has an active thinking process which he uses to reconstruct into his own variant of middle class English and then in turn to repeat the sentence in his own language. We believe that these children possess a far more active intelligence than is judged by previous research.

Any sample of a child's oral language must focus on what is "right;" i.e., is meaning maintained and, if so, the child's phonological and morphological errors may overshadow an active intelligence.

It may be well for us to remember that any test score or observation of a child is only a score on which to base further study. Readiness implies that the child is ready to comprehend instruction. Many deprived children, as discovered in the Educational Improvement Project in Durham or in Georgia Cooper's project in Contra Costa County, California, have poor scores on measures of articulation and spontaneous verbal fluency but, given training in auditory skills to both decode spoken language and to understand what is required of them, can and do learn how to read standard English with remarkable success. It becomes the teacher's job to plan ways for the child to understand that initial reading is composed of understanding that letters stand for sounds and that there is a relationship between their own language and the letter-sound correspondence of reading and spelling.

Let us consider another example: a teacher visiting a demonstra-

tion school arrived at a second grade classroom carrying her purse and a large bag and wearing a coat to ward off the cool morning air. The class was already in session as she took one of the seats provided for observers in the rear of the room. She placed her purse and bag on the floor beside her chair. She sat for a moment and then reached for her purse and, rummaging through it, picked out her glasses. She dropped her purse carefully to the floor and put on her glasses. A few seconds later she picked up her purse, fingered through it again, found a piece of tissue, cleaned her glasses, and set the purse back on the floor. Barely settled, she reached for her bag and pulled out a clipboard. Next, she put the clipboard on the floor, picked up the purse, and searched until she found a pen. She then retrieved her clipboard and began to observe. Moments later, she placed both clipboard and pen on the floor, stood up, removed her coat, carefully smoothed it over the back of the chair, sat down, and picked up her clipboard and pen.

At this point a small second grade pupil, who had been observing the visitor's activity, walked up to her and asked, "Are you making a nest?"

It is the teacher's responsibility to diagnose when children are perceiving activities as nest building rather than focusing appropriately on what is being taught and the skills that are to be mastered.

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Reading Achievement of Monolingual and Bilingual Children in Relation to Selected Linguistic Variables

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THE PAST DECADE witnessed a tremendous upsurge of interest in a wide range of reading correlates. Most investigations to examine various interrelationships represented "new variations on old themes." The focus on the primacy of oral language and, particularly, the interest in language as a potential variable affecting reading achievement opened a new area of educational research stimulated largely by the monumental studies of Strickland (*18*) and Loban (*8*).

Studies to investigate the relationship between syntactic structures employed by children and comprehension of material matching the syntactic repertoire typical of children have shown significant positive results [Ruddell (*17*), Tatham (*19*), Bormuth et al (*2*), and Nurss (*11*)]. Evidence, although inconclusive, suggests a relationship between awareness of syntax and reading comprehension among high school students, O'Donnell (*12*) and Rinne (*15*).

Research examining the effects of bilingualism on syntactic awareness and reading comprehension is sparse. Available studies suggest conflicting and inconclusive findings. Reed (*14*) found superior scores in reading comprehension of bilingual seventh grade children who had studied syntax and paragraph structure over the scores of those who had not received such instruction. No differences were noted for monolingual children. Carrow (*3*), in a study designed to compare English language ability and achievement of monolingual and bilingual subjects, found monolinguals to demonstrate superiority in oral reading accuracy and comprehension. No differences

The research reported herein is a portion of a larger study funded by the Directorate of Research, Manitoba Department of Youth and Education.

were apparent in silent reading comprehension. Jacobs and Pierce (7) compared a monolingual American group of fifth and sixth grade children with three bilingual groups. The bilingual groups scored considerably higher on a nonverbal "uses" test of creativity and slightly lower on a verbal "word meanings" test. The combined scores showed the bilinguals scoring considerably higher than the monolinguals.

The conflicting findings suggest a strong need for continued research in an area of vital concern, particularly in a cultural setting that attempts to preserve its ethnolinguistic elements.

The present study was designed to compare the reading achievement of bilingual and native speakers and, further, to investigate the relationship between selected linguistic indices (written and oral) and reading achievement.

Procedures of the Study

A random sample of 72 children from grades one, four, and six was drawn from each of three distinctly different ethnolinguistic communities in Manitoba. The communities represented the following ethnolinguistic elements: monolingual, Anglo-Saxon, Protestant; bilingual, German, Mennonite; bilingual, French, Roman Catholic. Although the religious concomitant was not a variable selected for study, it served to delineate and identify distinct communities. Religious affiliation and language background constitute, perhaps, the most cohesive factor of ethnic communities in Manitoba. Communities selected were parallel with respect to socioeconomic level, relative proximity to a large metropolis, and school size.

Although monolingual subjects were consistently younger than their bilingual counterparts, no significant differences in age were noted. There was, however, a significant difference, at the .01 level, between IQ of the monolingual and each of the bilingual groups. No difference in intelligence was noted between the bilingual subsamples.

Language samples were elicited from each subject—two writing samples from grades four and six and two open-ended oral samples

from grades one, four, and six. The film media were employed as the evocative stimuli to elicit the samples.

Only two measures of linguistic maturity were examined in relation to reading achievement—mean T-unit length and mean number of sentence-combining transformations per T-unit.

Hunt (*6*) found T-unit length closely tied to linguistic maturity. His T-unit (minimal terminable unit) includes one main clause plus all the subordinate clauses attached to or embedded within it. This method enables the researcher to segment language systematically and consistently. In this method the T-unit resembles the phonological unit of Strickland, and even more the communication unit of Loban.

O'Donnell, Griffin and Norris (*13*) discovered that the average number of sentence-combining transformations per T-unit increased significantly with advance in grade level, lending support to these transformations as measures of linguistic maturity. The validity and objectivity of using relative frequency of sentence-combining transformations as a measure of maturity have been attested by a widespread acceptance of recent researchers—Menyuk (*10*), Hunt (*6*), and Bateman and Zidonis (*1*).

Subjects within each linguistic subsample and grade level were designated as *high* or *low* on the basis of mean T-unit length (oral and written). After the T-units (4340 written and 6477 oral) were analyzed for mean number of sentence-combining transformations, high and low sentence-combining levels were established within each grade level. These designations were made separately for oral and written data. The criterion measure for reading achievement was the Stanford Reading Test, Primary, Form I (Word Reading, Paragraph Meaning, and Vocabulary) for grade one. The Intermediate Forms I and II (Word Meaning, Paragraph Meaning, and Sentence Sense) were administered to grades four and six, respectively.

The reading achievement data were analyzed by analysis of variance procedures employing a 3×2 factorial design. The dependent variables were ethnolinguistic community and sex. Further analysis of variance tests were run on composite reading achievement scores, blocking on linguistic ability levels—i.e., high and low

achievers on mean T-unit length and sentence-combining transformations (written and oral).

Summary of Findings

Comparison of Reading Data of Monolingual and Bilingual Subjects

Reading score analyses are summarized in Tables 1 and 2, taking into consideration both linguistic community and sex variables.

Significant differences in Word Reading and Word Meaning occurred in the three grades at the .05, .001, and .01 levels of significance for grades one, four, and six, respectively. In all cases the difference favored the monolingual subjects. (Examination of means indicated that greater differences occurred between scores of bilingual German and bilingual French subjects than between monolingual and bilingual children).

There were significant differences for community effect (.01 level) at the grade one and four levels for Paragraph Meaning. The differences favored monolingual subjects in both instances. Except for the grade one sample, the magnitude of difference was greater between monolingual and bilingual subjects than between the two bilingual samples.

Table 1 reveals significant community differences for vocabulary subscores for grade one subjects, the difference favoring the monolingual sample. Worthy of note is the greater magnitude of difference, at the grade one level, for Paragraph Meaning than for either Word Reading or Vocabulary.

TABLE 1

ANALYSIS OF VARIANCE SUMMARY FOR GRADE ONE READING SCORES

	Word Reading	*Paragraph Meaning*	*Vocabulary*
Linguistic Community	•	••	•
Sex	•	••	
Com. Sex			

•• Significant at .01 level
• Significant at .05 level

Significant differences, among communities, between Sentence Sense scores occurred only at the grade six level (Table 2). The

TABLE 2

ANALYSIS OF VARIANCE SUMMARY FOR GRADES FOUR AND SIX READING SCORES

	Word Meaning		*Paragraph Meaning*		*Sentence Sense*	
	Gr. 4	*Gr. 6*	*Gr. 4*	*Gr. 6*	*Gr. 4*	*Gr. 6*
Linguistic	•••	••	••			••
Community						
Sex						
Com. Sex						

••• Significant at .001 level
•• Significant at .01 level
• Significant at .05 level

difference, favoring monolingual subjects, was at least as great between the bilingual samples as between monolingual and the highest scoring bilingual sample (bilingual German).

The only significant sex effects noted from Tables 1 and 2 occurred for grade one subjects for Word Reading and Paragraph Meaning at the .05 and .01 levels of significance, respectively. The difference favored female subjects.

No significant interactions occurred between community and sex effects on any reading variable.

Comparison of Reading Data Within Linguistic Levels

Analyses of reading data with respect to linguistic competence are presented in Tables 3 and 4. It should be noted that mean T-unit length and sentence-combining transformations, at the grade one level, derive from oral language samples only.

The highly significant difference (.001 level of significance) for mean T-unit length (grade one) indicates that grade one children whose utterances constitute the longest T-units achieve higher reading scores than their counterparts who speak in shorter T-units. There is no indication, from the data, that any interaction exists between community and T-unit length effects.

TABLE 3

ANALYSIS OF VARIANCE SUMMARY FOR READING SCORES WITHIN HIGH-LOW MTL LEVELS

	Written MTL		*Oral MTL*		
	Gr. 4	*Gr. 6*	*Gr. 1*	*Gr. 4*	*Gr. 6*
Linguistic Community	••	•	•••	••	•
MTL			•••		•
Com. MTL				•	

••• Significant at .001 level
•• Significant at .01 level
• Significant at .05 level

TABLE 4

ANALYSIS OF VARIANCE SUMMARY FOR READING SCORES WITHIN HIGH-LOW SCT LEVELS

	Written SCT		*Oral SCT*		
	Gr. 4	*Gr. 6*	*Gr. 1*	*Gr. 4*	*Gr. 6*
Linguistic Community	••	••	•••	••	•
SCT	•	•	•••		
Com. SCT					

••• Significant at .001 level
•• Significant at .01 level
• Significant at .05 level

Similarly, the highly significant difference (.001 level of significance) for mean number of sentence-combining transformations shows that grade one children whose speech reveals the highest frequency of sentence-combining transformations achieve higher reading scores than low-frequency SCT children. Again, no significant interaction occurred between linguistic and community effects.

The only significant main effect for grade four subjects was the number of sentence-combining transformations favoring the high achieving group. This difference was noted for the written data only.

Table 3 indicates a significant community by mean T-unit length interaction (.05 level) for the oral data at the grade four level.

This interaction can be explained by the superiority of monolingual and bilingual French high MTL groups over the low MTL group in reading achievement and the superiority of the low MTL over the high MTL group in the bilingual German group.

Two significant main effects for grade six subjects are noted from the tables—oral MTL and written SCT—both at the .05 level of significance. In both instances the high linguistic achievers gained significantly higher reading scores than lower achievers.

In neither community by MTL or community by SCT was any significant interaction noted.

Discussion

It appears from the findings that monolingual children are superior to their bilingual counterparts in reading performance. Although the differences are substantial, it must be remembered that the monolingual children in this sample were also superior in intelligence to the bilingual children.

It is noteworthy that the monolingual-bilingual dichotomy is too broad to warrant conclusive statements regarding educational implications—differences in reading means, in some instances, were as great between bilingual French and German as between monolingual and bilingual subjects.

It would follow then that, if bilingualism is a factor affecting reading performance, it is a variable that affects differentially the two bilingual groups. The specific variables that operate within the two bilingual environments to account for the differential await discovery in further research. It may be that specific language structures inherent within one language offer greater potential for syntactic context clues in reading English than structures within another language. Further, one cannot discount the possibility that certain culturally related rather than language-related environmental variables account for at least part of the differential.

Differences in reading means were somewhat more pronounced at the grade one and four levels than at the grade six level. The conclusion might well be drawn that, if bilingual children experience some reading deficit as a result of linguistic interference or

incompetence, the deficit is not cumulative. The contrary, in fact, would appear to be true from the findings of the present study.

The greater differential between monolingual and bilingual grade one subjects for Paragraph Meaning than for either Word Reading or Vocabulary suggests at least one interesting possibility. It may be that bilingual subjects at this level are at a greater disadvantage in Paragraph Meaning than in decoding skills as a result of syntactic interference from their first language.

The findings of the study lend considerable support to the relationship between reading and linguistic facility suggested by other studies, Strickland (*18*) and Loban (*8*). The highly significant F-ratios favoring the high achieving grade one subjects both in mean T-unit length and mean number of sentence-combining transformations suggest a rather pronounced relationship between oral language skills and ability to read.

Although superiority in producing written sentence-combining transformations was the only variable related significantly to reading skills in grade four, the high linguistic group consistently scored higher in reading than the low group. A similar observation can be made regarding the superior reading scores of grade six high linguistic achievers in mean T-unit length.

The present study does suggest evidence of somewhat different degrees of relationship between reading and language facility as a function of grade level than suggested by earlier studies. Both Strickland and Loban found no significant correlation between children's oral language (complexity of sentence patterns) and reading achievement in the primary grades. They did, however, find significant correlations between the two variables in the intermediate grades. Strickland found a significant correlation at the grade six level but not at the grade two level. Loban found that in grade three the highest achieving readers consistently demonstrated good oral language ability but that this ability did not necessarily go with superior reading achievement. Like Strickland, he found that the relationship between oral language and reading increases from grades four through six. There is nothing in this study to specifically confirm or refute this trend since the specific aspects of language examined in relation to reading ability were two very specific

language variables—mean T-unit length and sentence-combining transformations. It is, however, interesting to note that the only significant difference, at the grade four level, on linguistic competence occurred for the written SCT variable. At the grade six level two variables, oral MTL and written SCT, proved significantly related to reading achievement.

A very basic question emerges from the monolingual superiority over the bilingual subsamples in reading achievement: is superior language flexibility and competence the variables that account for the increments? It seems reasonable that, if syntax is one of the constraints involved in learning to read, the greater the number of probabilities with respect to available number and types of words that can follow other words, the greater the ease with which the reader will anticipate relevant words or strings of words in print. Roberts (*16*), views familiarity with syntax as one means of cue reduction available to the reader. According to him, syntactic competence facilitates the processing of perceptual input as the reader reduces the "uncertainty level" in reading from the position and order of letters, the juxtaposition of words, the formation of the phrases and sentences, and the part they play within the paragraph or story.

There is substantial evidence from the study to imply a positive relationship between linguistic competence and reading performance. The question arises whether the linguistic difference associated with the bilingual children in the sample can be equated with the language of children who, in Bernstein's terms, are trained only in the "restricted code" and who thus experience more difficulty in speech and writing than those who practice more extensive modes of communication at home. According to O'Donnell (*13*), such discrepancy cannot be accounted for by differences in intelligence only.

Mellon (*9*) found that training junior high school students in transformational sentence synthesis increased students' flexibility and elaboration of language. Similarly, Hilfman (*5*) found that grade two children exposed to a series of sentence expansion techniques learned to write longer sentences than before training. The crucial question facing the researcher-educator is the extent to which similar training procedures can be devised to aid the bilingual child in language

elaboration and to determine the transfer potential of such training for reading comprehension.

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The Effect of Transformed Syntactic Structures on Reading

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THE EFFECT of syntax on reading comprehension has commanded the attention of several researchers during the past decade; however, their studies were conducted using subjects from only one or two grade levels. Recent research on the developmental syntax of students' written compositions has provided the basis for a technique which allows the investigation of reading skills at several grade levels (2, 6). These studies have shown that older students incorporate more material into each T-unit,* thus making the T-unit transformationally more complex. The measurement techniques developed in these studies allow an experimenter to rewrite one passage of any length at several different levels of syntactic complexity, each level reflecting student performance at a particular grade level (or level of maturity). Consequently, a set of passages could be devised in which only the syntax would vary while retaining the same vocabulary and content.

Purpose

The purpose of this research was to determine whether syntactically more complex structures increase reading difficulty or whether all students, regardless of grade level, have the same syntactic skills and thus read with equal facility material written at different levels of syntactic maturity, provided the vocabulary and content are held constant.

Construction of the Instrument

The test instruments were derived from a transformational analysis of the data from Hunt's study (2). Hunt asked students from

* A T-unit is a main clause plus any subordinate clause or nonclausal structure attached to or embedded within it.

grades four, six, eight, ten, and twelve and skilled adults to rewrite a passage about the making of aluminum. The passage was presented in the form of kernel sentences. From the analyses of the data of the fourth, eighth, and twelfth graders and skilled adults' rewritten passages, the prototypes of each level were written (Appendix); that is, after determining what Hunt's subjects typically did with each input kernel, the prototypes were written accordingly, keeping all syntactic characteristic measurements as close to Hunt's means as possible. For example, Hunt's data indicated that eighth graders normally used the first input kernel as the main clause of the first sentence. Consequently, the same kernel was so used in writing the prototype of the eighth grade writing. These eighth graders normally converted about four input kernels to subordinate clauses. In the prototype, the number of subordinate clauses was increased to five; for if only four had been used, it would have necessitated unacceptable changes in other syntactic characteristics.

Thus, the instruments were simply the "Aluminum" passage as rewritten by "typical" fourth, eighth, and twelfth graders and skilled adults. These paragraphs were typical in the sense that they exhibited the syntactic characteristics of the average performance of an average group at each level. The syntactic characteristics were determined by the analysis of the rewritten forms collected. All characteristics were quantifiable; no subjective interpretations were used.

Many readability formulas use sentence length as a determining factor; therefore, it was deemed necessary that sentence length be held constant in all paragraphs. Since the only difference between sentence length and T-unit length is the number of coordinated T-units (i.e., the number of words per T-unit multiplied by the number of T-units per sentence equals the number of words per sentence; $W/T - u.\ T - u/S = W/S$), the skilled adult T-unit length was used as the standard sentence length. This practice kept the standardized sentence length at the lowest feasible size. The sentence length of the other paragraphs was increased to the standard length by coordinating T-units. In the fourth grade passage, the number of coordinated T-units was doubled. This method of equalization was chosen because pilot studies using different amounts of T-unit coordination showed that reading difficulty was not affected.

TABLE 1

THE "ALUMINUM" PASSAGE: STATISTICS COMPARING ACTUAL WRITING WITH PROTOTYPES

Syntactic Characteristic	Fourth Grade Passage			Eighth Grade Passage			Twelfth Grade Passage			Skilled Adult Passage		
	Hunt's Data		Proto-	Hunt's Data		Proto-	Hunt's Data		Proto-	Hunt's Data		Proto-
	Mean	S.D.	type	Mean	S.D.	type	Mean	S.D.	type	Mean	S.D.	type
Words/Clause	5.19	.88	5.45	6.79	1.12	6.77	7.85	1.20	7.79	9.95	1.58	10.33
Clauses/T-Unit	1.04	.11	1.04	1.43	.29	1.38	1.44	.27	1.56	1.51	.30	1.50
Words/T-Unit	5.42	1.13	5.64	9.48	3.06	9.38	11.30	2.64	12.11	14.78	3.26	15.50
Words/Sentence			15.80			15.25			15.57			15.50
Coordinated Main Clause	8.84	5.64	18.00	2.44	2.89	3.00	.64	.37	2.00	.24	.99	0.00
Coordinated Predicates	1.86	5.20	2.00	2.28	1.67	2.00	1.82	1.43	2.00	1.48	1.46	1.00
Less Than Pre licate	1.66	2.88	1.00	9.72	4.48	12.00	13.52	6.17	16.00	17.64	2.64	22.00
Less Than Clause	3.52	2.40	3.00	11.96	4.05	14.00	15.48	3.53	18.00	19.12	2.21	23.00
Subordinate Clauses	.58	1.41	1.00	4.16	2.17	5.00	3.62	1.74	5.00	2.16	1.40	3.00

Once the paragraphs were written, they were each rewritten using every sequence of the "every-fifth word" deletion schedule. That is, each paragraph was written deleting every fifth word beginning with the second word, then beginning with the third word, then the fourth, fifth, and, finally, with the sixth word. In no instrument was either the first or last word of the paragraph deleted.

Procedure

One hundred and twenty students were randomly selected from each of the grades four through twelve in a Florida school system. Each subject was given one of the test instruments.

The teachers in the system administered the tests. Since the directions were written on each instrument, no verbal instructions were given before the test; nor was any assistance given during the test. No time limit was imposed, for prior testing showed that no subject required more than 40 minutes to complete the test.

Hypotheses

It was hypothesized that there would be no significant difference in comprehensibility between the four levels of writing at each grade level of reader and in comprehension between the nine levels of readers on each level of writing.

Results

The data were subjected to separate one-way analyses of variance tests. The results showed that the fourth, tenth, and eleventh grade Ss significantly (.05) distinguished between the four levels of writing. The fourth graders read the fourth grade writing best; and the eleventh graders read the fourth grade writing with least facility. However, the older Ss (grades ten, eleven, twelve) consistently read all levels of writing significantly (.01) better than did the younger Ss (grades four, five, six).

Discussion

The results of this research are interesting in relation to previous studies. Ruddell (7) showed that fourth graders read more easily passages constructed using the sentence patterns produced

with high frequency by fourth graders. Two possible interpretations of Ruddell's results can be proposed: 1) Since the high frequency patterns were simpler (i.e., less complex), the redundancy was higher and thus enhanced the predictability of the words; 2) the results could also mean that fourth graders read best what they themselves normally produce but lose efficiency when reading more mature structures. The results of the present research tend to support the second interpretation, for only in the early grades was the highly redundant writing read better. Had all students at all grade levels read the fourth grade level of writing best, the first interpretation would have been preferred. This was not the case. It should be noted, however, that in the case of just the fourth graders, not considering any other grade level, either interpretation could be accepted.

A comparison of the studies by O'Donnell (*5*) and DeLancey (*1*) suggested that while older students would perform better than younger students on any material written at any level of syntactic maturity, the students' performances would be inversely related to the level of complexity. O'Donnell's test was written at the eighth grade level of writing and Delancey's, between the fourth and eighth grade levels. The comparison with the results of instruments written at similar levels in the present research shows that the suggested inverse relationship does not exist.

The results of her research led Nurss (*4*) to state that "less complex structures were easier to understand in oral and silent reading modes, but more difficult to understand in the listening mode." It has long been believed, although not adequately tested (*3*), that a child's receptive skills are superior to his productive skills and that, of the receptive skills, listening is more advanced than reading. Consequently, it is not illogical to assume that a child's listening skills would be equivalent to an older child's reading skills. If this assumption is accepted, Nurss's findings predict the results of the present research. The children in her study read the least complex writing best, just as the youngest children in the present research did. The more mature students in the present research read the more complex writing with higher comprehension. Similarly, Nurss's children understood better, in the listening mode, the more complex structures.

A critical analysis of the data (Figure 1) revealed that the ele-

mentary grade subjects read the fourth grade level of writing best but that the eighth grade level of writing soon became easier to read. Even the twelfth grade and skilled adult writing was easier to read than the fourth for all high school students.

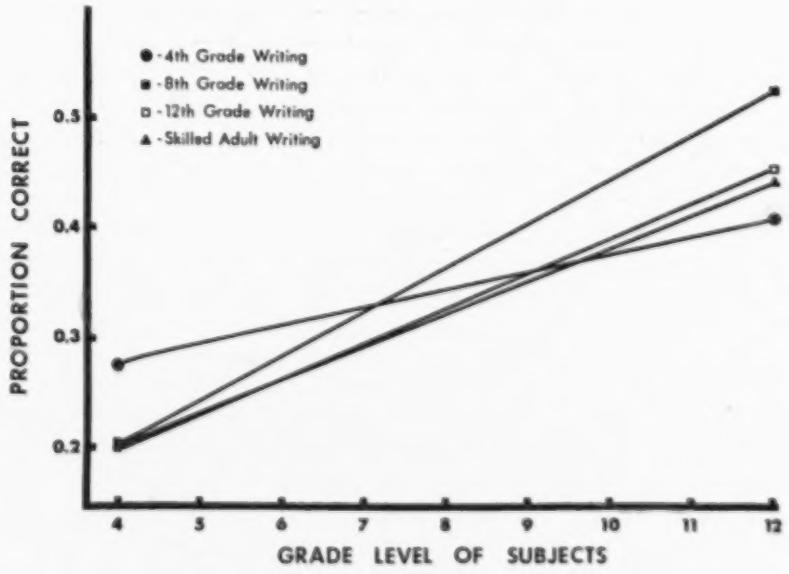

FIGURE 1

The data further indicated that while there was little change over the several grades in the comprehension of the fourth grade level of writing, there was a notable increase in the other three levels, particularly in the eighth grade level of writing.

In theory, the cloze technique is based on predictability. The person taking the test must, from the context, predict the missing words. It logically follows that the most redundant writing would provide the most clues and, therefore, increase the predictability. If this condition were true, the fourth grade writing would be the easiest to predict from, for it is distinguished by the absence of complexity. Whereas a more mature writer will reduce two or more kernels to one by the process of embedding, the fourth grader is more

apt to coordinate the entire kernels if, indeed, he doesn't retain them both as full sentences. Therefore, the theory would predict that all students would be able to make more correct predictions on the fourth grade level of writing and the fewest on the skilled adult level of writing. This supposition, however, does not seem to be the case. The lack of improvement in facility in reading the fourth grade level of writing indicates that redundancy is not the only factor in prediction (provided, of course, that the student knows the words). There must be some other factor or factors involved in the process of reading which would cause the more mature readers to make incorrect predictions on very simple writing yet be more correct on more mature writing.

One possible factor could be, for lack of a better word, habit. The older subjects do not normally encounter simple, noncomplex sentences. The younger subjects do not normally read complex sentences. Furthermore, research has demonstrated that older students write more complex sentences. Consequently, the redundancy level the reader is accustomed to in both reading and writing may affect, possibly determine, the predictions he would make on a cloze test. When confronted with a passage of different complexity, predictability would be lessened.

From this possible conclusion, a tentative hypothesis can be formulated to explain the differences in comprehension on the various levels of writing used in this research: As a student matures, he comprehends best the material which is written near his own productive syntactic level, provided the vocabulary and content are not foreign to him. In essence, this hypothesis says that what the student normally produces (i.e., the syntactic level at which he writes) influences or is influenced by the syntactic level at which he reads. To test the hypothesis, it would be necessary to devise test instruments similar to those used in the present research and have them read by college students and skilled adults as well as students from grades four through twelve.

If the hypothesis is adequate, the results of such an experiment should show that 1) the subjects' comprehension of the fourth grade level of writing increases less than the other levels and only the elementary grade subjects read it best; 2) the subjects' comprehen-

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sion of the eighth grade level of writing increases rapidly until about the early college level. The subjects in and above the eighth grade should read the eighth grade writing better than they read fourth grade writing; 3) The comprehension of the twelfth grade level of writing increases less rapidly than the eighth grade level in the early years but becomes easier to read than eighth grade writing during the college years; 4) The comprehension of the skilled adult level of writing would initially increase less rapidly than the twelfth grade writing by subjects in the late college years. The skilled adults should clearly read skilled adult writing best.

Conclusion

This study was designed to investigate the effects of increasing syntactic maturity on the reading comprehension of students at nine grade levels when vocabulary, sentence length, and content are held constant. The findings of the study would seem to indicate the following conclusions:

1. For students in grades four, five, and six, fourth grade writing appears to be easier to read than writing by more mature students. But for older students, fourth grade writing is not the easiest;

2. The more mature students (i.e., in grades eight through twelve) find eighth grade writing easier to read than either the simpler fourth grade writing or the more complex of twelfth graders or skilled adults;

3. Since fourth grade writing is the most redundant, word predictability (which is what the cloze technique measures) is more than a function of redundancy for the students in the middle and upper grades. However, for the lower grade students (i.e., fourth, fifth, and sixth) it might be just redundancy. This phenomenon is open to speculation.

The findings of this study offer no definite conclusions about the appropriateness of different syntactic levels of writing in the reading material at various grade levels, but there are indications that the productive level may determine the best receptive level.

Appendix A

Prototype Passages

ALUMINUM

Fourth Grade Level of Writing

Aluminum is a metal, and it is abundant, and it has many uses, and it comes from bauxite. Bauxite is an ore, and bauxite looks like clay, and bauxite contains aluminum, and it contains several other substances, and workmen extract these other substances from the bauxite. They grind the bauxite and put it in tanks, and pressure is in the tanks, and the other substances form a mass. They use filters, and they remove the mass, and a liquid remains. They put it through several other processes, and finally it yields a chemical, and the chemical is powdery and is white. The chemical is alumina which is a mixture, and it contains aluminum, and it contains oxygen. Workmen separate the aluminum from the oxygen by using electricity. They finally produce a metal, and the metal is light, and it has a luster, and the luster is bright, and the luster is silvery. This metal comes in many forms.

ALUMINUM

Eighth Grade Level of Writing

Aluminum is an abundant metal, has many uses, and comes from bauxite which is an ore that looks like clay. Bauxite contains aluminum and several other substances. Workmen extract aluminum from bauxite by grinding it, then putting it in pressure tanks where the other substances form a mass. The mass is removed by filters, and a liquid remains. The liquid is put through several other processes, and finally it yields a powdery, white chemical. The chemical is alumina, a mixture which contains oxygen and aluminum. Workmen separate the aluminum from the oxygen by the use of electricity, and finally a metal is produced. This metal is light, and it has a luster which is bright and silvery, and it comes in many forms.

ALUMINUM

Twelfth Grade Level of Writing

Aluminum is an abundant metal with many uses, and it comes from an ore called bauxite which looks like clay. Bauxite contains aluminum and several other substances which are extracted from it. Workmen grind the bauxite and put it in pressure tanks. The other substances form a mass which is removed by the use of filters. A liquid remains and is put through several other processes which finally yield a white, powdery chemical called alumina. Alumina is a mixture containing aluminum and oxygen, which are separated by the use of electricity. Finally a light metal with a bright, silvery luster is produced, and this metal comes in many forms.

ALUMINUM

Skilled Adult Level of Writing

Aluminum, an abundant metal with many uses, comes from bauxite, an ore which looks like clay. To extract the other substances from the aluminum found in bauxite, the bauxite is ground and is put in pressure tanks. The other substances form a mass which is removed by filters. The remaining liquid is put through several other processes, finally yielding a powdery, white chemical, alumina, which is a mixture of aluminum and oxygen. The oxygen is removed by electricity, producing a light metal with a bright, silvery luster. This metal comes in many forms.

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The Effects of Nonstandard Dialect on the Oral Reading Behavior of Fourth grade Black Children*

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IN RECENT YEARS, a small group of linguists have set forth some proposals for dealing with various issues involved in teaching Negro children to read based upon hypothesized linguistic differences of a dialectical nature. These contentions and recommendations have been labeled by some as drastic and by others as biased. However, certain of these propositions appear to deserve serious and thorough empirical study by educators in the reading and language arts field who are concerned with obtaining information regarding the influence of linguistic styles on reading behavior.

The writings of Stewart (*4*) seem to present these linguists' contentions in the clearest fashion. Stewart contends that the major problem facing black children in learning to read is that the language they bring to the typical classroom is significantly *different from but not inferior to* the language of their teachers and the instructional materials used.

Stewart's interpretation of the major linguistic studies conducted in such cities as Washington, D. C., New York, Chicago, and Detroit is that the oral language of Negro children can best be characterized as a well-developed, systematic, organized system which differs in certain specific and identifiable ways from standard English speech. Unlike many of his fellow linguistic scholars, Stewart feels that the major differences are syntactical and grammatical rather than phonological.

Stewart recommends the development of beginning reading materials that are written in Negro nonstandard language and then

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the use of systematically organized transition materials to lead the students to eventual reading of texts written in conventional standard English. He feels that at present the Negro youngster encounters great interference between his own language patterns and the language of the reading textbooks. He suggests that what teachers have labeled as oral reading errors are simply instances of that interference exhibiting itself.

To support his contentions, Stewart cites the research study conducted by Baratz (*1*). A sentence-repetition task that contained 15 standard English sentences and 15 equivalent Negro nonstandard English sentences was constructed by Baratz. These sentences were so designed as to contain eight different syntactical and grammatical constructions which various linguistic studies have identified as major points of distinction between standard English and nonstandard Negro dialect speech.

This sentence-repetition task was administered to White and Negro students at the third and fifth grade levels. In reference to the performance of the Negro subjects, Baratz found that they were significantly superior to the White subjects in repeating the nonstandard sentences. In addition, when asked to repeat the standard English sentences, the Negro subjects attempted to "translate" the sentences to their own nonstandard language in predictable ways. Such data regarding these transformations have been cited by linguists as evidence for a postulated "interference effect" resulting from introducing black children with nonstandard dialect to reading in materials written in standard English.

Purpose of Present Study

The study reported in this paper was designed to provide data regarding this untested assumption in the logic of Stewart and Baratz. The question must be raised whether Negro children, particularly children from hardcore poverty areas, when asked to read orally in standard English sentences do exhibit the dialect interference problems that Baratz and Stewart postulated. Baratz's study focused only on an oral-aural repetition task rather than on behavior directly involving some aspect of the reading act.

The general research hypothesis of this study was as follows: There will be no significant manifestations of different linguistic styles in the oral reading of standard English sentences by a specific sample of fourth grade Negro children.

Subjects

The subjects in the study were 25 Negro children randomly selected from an inner-city, low income, neighborhood school. The sample consisted of 17 females and 8 males whose average chronological age was 10-0 at the time of the study.

Complete intelligence data, obtained from the school's cumulative records, were available for 18 of the subjects. The data were based on an administration of the California Test of Mental Maturity the previous school year. The 18 subjects were found to have an average Language IQ of 82.9, an average Non-Language IQ of 79.0, and an average Total IQ of 78.1.

Current reading achievement data were available for only six subjects. On the basis of an administration of the California Achievement Test in September of the same school year as the study, the six subjects were found to have an average Total Reading Grade Placement score of 2.6.

Testing Procedures and Analysis of Data

The testing materials used in the study consisted of the 15 standard English sentences developed by Baratz for her Sentence Repetition Test. These sentences were typed on cards with the use of a primer typewriter.

All testing was done individually by one of the investigators. The order of sentence presentation was randomly assigned for each child so that any order effects would be controlled. The sentences were presented to each child, one at a time; and each child's oral reading responses were tape recorded to facilitate later analyses.

Once the data collection began, it was evident that certain of the children randomly selected were unable to read the 15 sentences. Every attempt was made to elicit responses from each child, but it

did become necessary to replace certain subjects from the original sample drawn because they manifested almost total nonresponse to the sentences. Replacements were obtained by selecting new subjects randomly from the remaining pool of fourth graders until a total sample of 25 subjects was reached.

As was mentioned in an earlier section of this paper, Baratz constructed her sentences around eight key grammatical and syntactical features considered to be crucial in differentiating Negro nonstandard dialect from standard English. Therefore, the analysis of the data centered around these eight features present in various places in the 15 sentences. (Table 1 contains a listing of the eight features with illustrative examples of expected dialect responses.) It should be emphasized that any child's response to a feature was categorized as dialect-based only if it matched what Baratz identified in her study as the predominant pattern in nonstandard oral language.

TABLE 1

EXAMPLES OF EIGHT SYNTACTICAL AND GRAMMATICAL FEATURES DISTINGUISHING NEGRO NONSTANDARD SPEECH FROM STANDARD ENGLISH

Feature	*Standard English*	*Nonstandard Equivalent*
Third person singular verbs	He runs home.	He run home.
Copula	He is over there.	He over there.
Negation	I don't have any.	I don't got none.
"If" construction	I asked if he did it.	I asked did he do it.
Past verb marker	Yesterday he walked home.	Yesterday he walk home.
Use of verb "to be"	He is here all the time.	He be here.
Noun plural marker	He didn't go to the games.	He didn't go to the game.
Possessive marker	John's cousin.	John cousin.

The 15 Baratz sentences were analyzed, and each instance of any of the eight key features was identified. The taped transcriptions of each subject were then studied with primary attention to what the oral reading response had been to each instance of the eight key features. Each child's response for an item was placed in one of the

following three categories: 1) responses identical to what the text said; 2) responses which matched what Baratz contends to be dialect-based; and 3) other responses involving assumed decoding errors or perhaps other dialect responses.

A summary sheet was prepared for each child's responses. This summary sheet indicated the total number of responses falling into each of the three categories for all eight features. Then a master sheet was prepared by combining the data from each of the subject's summary sheets. Various applications of the chi-square test were then made on the total data, following procedures prescribed by Siegel (*3*).

Major Findings

The first basic question asked in the analysis of the data centered around the extent to which the Negro fourth graders exhibited in their oral reading certain syntactical and grammatical features responses which could be considered to be dialect-based. In other words, what proportion of the children's oral reading responses was identical to what Baratz and Stewart found to be a predominant response in nonstandard Black English? Table 2 contains the percentages of correct responses, supposedly dialect-based responses and other responses for each of the eight features studied.

As can be seen from the data in Table 2, supposedly dialect-based responses were observed for only four of the eight features. It should be emphasized at this point that those responses categorized as dialect-based are only assumed to be so. It is entirely possible that the responses categorized as dialect-based may actually be decoding miscues. It is possible that some of the other responses that deviated from the actual text may in some way also be dialect-based.

A second finding relates to the question of whether the frequency of assumed dialect-based responses differed significantly among the four features for which such responses were observed. An X^2 of 35.21 was computed which, with 3 degrees of freedom, is significant beyond the .001 level of confidence. By looking at the data reported in Table 2, it can be seen that the significant difference can be explained by the fact that a much higher percentage of dialect-

TABLE 2

PERCENTAGES OF READERS' RESPONSES FALLING INTO THREE CATEGORIES FOR EACH OF EIGHT SYNTACTICAL AND GRAMMATICAL FEATURES STUDIES (N = 25)

Feature	*% Correct Responses*	*% Assumed Dialect-Based Responses*	*% Other Responses*
Possessive noun marker	24	62	14
Noun plural marker	65	32	3
Past verb marker	71	22	7
Third person singular verbs	65	21	14
Copula	90	0	10
Negation	88	0	12
"If" construction	73	0	27
Use of verb "to be"	96	0	4

based responses was found for the Possessive Noun Marker feature than for the other three.

The third question in the analysis was concerned with the consistency of dialect-based responses for each of the items constituting a particular feature. In other words, if a child gave an assumed dialect-based response for one instance of a given feature, did he also give dialect-based responses for the other instances of that feature in other sentences? Each of the four features for which dialect-based responses were observed was analyzed separately. An X^2 test was performed on the frequency of dialect responses for each of the items constituting the instances of the particular feature.

For the Past Verb Marker, Third Person Verb, and Possessive Noun Marker features, the resulting X^2s were nonsignificant, indicating a consistency of frequency of dialect-based responses across items. For the fourth feature, Noun Plural Marker, an X^2 of 26.7 was computed which, with 3 degrees of freedom, was significant beyond the .01 level of confidence. This outcome indicates an inconsistency of responses for this feature. In other words, the children were more apt to make dialect-based responses for certain Noun Plural Marker items than for others.

Discussion of Findings

One perhaps should not be surprised to find that dialect-based responses were observed for only four of the eight features studied. Although he has not reported the actual data, Shuy (2) has indicated that his observations of the reading errors produced by nonstandard speakers show that the greater the difference between the standard and nonstandard features, the more likely it is that a child will learn to read the standard English version accurately. In other words, for the four features where no dialect-based responses were observed, a child would have to make major deviations from the printed text to translate it to his own nonstandard speech. Conversely, the less basic the difference between standard and nonstandard, the less important it seems to the child and, hence, the more likely it would be to observe such transformations in oral reading behavior.

Shuy has also pointed out another important consideration in interpreting such studies as this one. As was discussed earlier, certain children could not be included in the sample of subjects because of basic reading problems. It is entirely possible that those very children are the ones more apt to exhibit dialect interference in their oral reading of standard English. That is to say, the percentages reported in Table 2 may be an underestimation of the extent of dialect-based responses in the oral reading of the Negro fourth graders in this study.

With reference to the finding showing an inconsistency of responses for the Noun Plural Marker feature, the specific items for this feature were studied for any possible clues to explain the situation. There were a total of four items in the sentences which constituted all the instances of this feature. It was found that for two of the items, rather consistent dialect-based responses were observed with practically no such responses for the other two items.

One possible explanation is that for the two items where few dialect responses were found, there was an adjective of number in front of the noun (*three dollars, two books*) whereas for the other two items, there were no such adjectives (*Sunday afternoons, the games*). The presence of the numeral adjectives may have made the readers more conscious of the plural marker.

Further Research

The investigators are now engaged in a similar study with children in grades three, five, and six in the same school. Once these data have been collected and analyzed, comparisons can be made to see if the findings reported in this preliminary study are consistent across these four different grade levels. In this analysis, it might also be possible to further explore the influence of age and habituation in the oral reading behavior of Negro students.

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Reading and Black English

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> . . . the "ignorance of standard English rules on the part of the speakers of standard English" and the "ignorance of nonstandard English rules on the part of teachers and text writers" may well be the cause for the reading failures that occur in the schools.
>
> LABOV and BARATZ

SIGNIFICANT STUDIES concerning the relationship between reading and Black English (BE) have appeared only recently. The concept is still so new that it has not been widely known, and its general acceptance may be long in coming. Many issues are unresolved pending further research. Major contributions, however, have been made by linguists and sociolinguists who have helped and are continuing to unravel the possible sources for reading failures of millions of minority children and adults, particularly in the black populace. As these experts begin to pool their findings, certain evidence becomes clear; and educators will do well to heed these findings which should have direct implications right in the classroom.

I shall try to discuss these implications in terms of broad objectives. The teacher should 1) become knowledgeable about BE, its history, and its linguistic features; 2) develop a positive attitude toward BE and its speakers; and 3) apply the knowledge and positive attitude in the classroom.

Knowledge of Black English

For too long, middle-class teachers have been under the assumption that there is a single, correct way of speaking and that everyone who does not speak standard Anglo English (AE) is in error. Not understanding the nature of language and of BE in particular, teachers, like others, have erroneously viewed BE as pathological, dis-

ordered, "lazy speech." As an extreme, some consider the black student with his nonstandard variety a "verbal cripple" whose restricted language leads to, or is caused by, cognitive deficits.

Few linguists, as recently as a decade ago, considered BE worth studying. Stewart (*38*) has since presented convincing arguments for a historical development of the BE as a creolized and later decreolized form. The BE language patterns have been in existence for generations, being passed on to the present speakers from parent and peer "through a perfectly normal kind of language learning process."

The question then becomes, "To what extent does Black English interfere with the usage of Anglo English?" Available evidence from sociolinguists is illuminative if yet inconclusive. Stewart argues that while boundaries between a full-fledged foreign language like Spanish and English are usually clear-cut, "the many similarities between any Negro dialect and standard English make it difficult to tell exactly where one leaves off and the other begins" (*38, 23*). ". . . the subtlety of the structural differences between the two forms of English . . . may make it almost impossible for the speaker of Negro dialect to tell which patterns are characteristic of nonstandard dialect, and which ones are not. Indeed, this attribute may explain why it is that many immigrant populations have been able to make a more rapid and successful transition from their original foreign language to standard English than migrant Negroes have from their own nonstandard dialect to standard English" (*37*).

Sociolinguists generally suggest there are more similarities between BE and AE; and among the differences, some are more relevant to reading problems than others. Chief among those identified in major research by Labov in New York, Wolfram in Detroit, Pederson and McDavid, Jr. in Chicago, and Stewart and Shuy in Washington, D.C., are phonological and grammatical interferences. The following are samples of such variables, greatly simplified and depleted of technical terminology where possible.

Phonological Features

Labov (*15, 18*) in a study of BE dialects in Harlem discovered certain phonological differences from AE of which a few are listed below.

1. *r*-lessness. Dialect speakers from Eastern New England, New York City, and many cities in the south usually substitute a centering glide (schwa) in place of *r* in *fear, care,* etc., and show only a lengthened vowel in *car, for,* etc., thus producing pairs of homonyms such as the following:

guard = god	par = pa
nor = gnaw	fort = fought
sore = saw	court = caught

Black speech has an even higher degree of r-lessness. The *r* becomes a schwa or simply disappears before vowels as well as before consonants or pauses. Thus, *r* is never pronounced or heard in *four* or in *four o'clock.* Similarly, the intervocalic *r* in the middle of a word is also missed, forming another set of homonyms:

Carol = Cal	carrot = cat
Paris = pass	terrace = test = Tess

2. *l*-lessness. Dropping of the liquid *l* is similar to that of dropping *r* except that the former is often replaced by a back unrounded glide (ɯ) instead of the center glide for r. Or, the *l* disappears completely, especially after the backrounded vowels. This pronounced characteristic produces such homonyms as the following:

toll = toe	all = awe
help = hep	Saul = saw
tool = too	fault = fought

3. Simplification of consonant clusters at the end of words. There is a general tendency to reduce end consonant clusters to single consonants, particularly those ending in /t/, /d/, /s/, or /z/. In approximate order of frequency, the /t,d/ clusters affected are /-st, -ft, -nt, -nd, -ld, -zd, -md/, thus generating homonyms such as the following:

past = pass	mend = men
rift = riff	wind = wine
meant = men	hold = hole

The combined effect of several rules may result in

told = toll = toe

The /-s, -z/ cluster simplification involves words like

axe	parts	leads	that's
six	aims	besides	it's
box	rolls	John's	its

resulting in these homonyms:

six = sick Max = Mack
box = bock mix = Mick

Labov found that the simplification of the /s, z/ clusters is much more characteristic of black speakers than of white speakers.

4. Weakening of final consonants. This is another example of a general tendency to produce less information after stressed vowels, so that the endings of words, be they consonants, unstressed final vowels, or weak syllables, are devoiced or dropped entirely. Though less regular than the ones already described, the individuals who possess this characteristic seem to have the most serious reading problems. Most affected by this process are final /d/ and /t/; less often, /g/ and /k/. Common homonyms are the following:

Boot = Boo seat = seed = see
road = row poor = poke = pope
feed = feet bit = bid = big

5. Other phonological variables. Of lesser import to reading problems yet affecting the shapes of words are the following:

(phoneme)	(Position)	
/i/ = /e/	before nasals	pin = pen; since = cents
/ih/ = /eh/	before r and l	beer = bear; peel = pail
/uh/ = /oh/	before r	sure = shore; poor = pour
/ay/and/aw/ = /ah/	monophthongized	find = found = fond; time = Tom

/oy/ = /h/	as a monophthong especially before l	boil = ball; oil = all
/o/ = /f/	final or intervocalic	death = deaf
/ð/ = /v/	final or intervocalic	bathe = bave
/str/ = /skr/	initial	stream = scream; strap = scrap
/šr/ = (sw,sr,s)	initial	shrimp = srimp = swimp

How much do these phonological variables affect reading? There has not been enough research evidence to render an adequate answer. Opinion varies. Labov proposes the potential homonyms may cause the black children difficulty in recognizing many words in their standard spellings. If the intervocalic *r* is not pronounced in the middle of "inte'ested" and "Ca'ol" in one's speech, how would the child have a clue to the correct spelling forms of those words? Where can a child with a great /t,d/ simplification and irreducible homonyms get a clue to the standard spelling differences from his own speech pattern?

Labov (*15*) recognizes that "the existence of homonyms on the level of a phonetic output does not prove that the speakers have the same sets of mergers on the more abstract level which corresponds to the spelling system." The phonetic processes discussed here are considered "low level" rules; they do not affect the underlying or abstract structure of words. Nevertheless, Labov points to at least one situation where the nonstandard underlying forms clearly exist. The plural //-s// inflection is seldom deleted in the black casual speech. By deleting /t/ from //test//, adding the plural //s//, the phonetic rules allow (tesɬz). Such speakers do this consistently in the most careful speech. Labov suggests the phonetic rules for //-s// are fairly "high level" rules which affect all //-s// suffixes and precede many other rules. He thus concludes that "children who use such forms have underlying lexical forms which are different from the spelling forms, and they would have no reason to expect to find test spelled T-E-S-T."

While acknowledging the existence of such phonological

differences, Stewart (*37*) considers the adverse effects of purely phonological differences to be slight.

> For, if the differences are regular enough, which they often are, then the Negro-dialect speaker may be able to set up his own sound spelling correspondences between them—ones which will be different from those set up by a speaker of standard English, but which will allow effective word identification nevertheless.

Stewart cited the example where the black dialect regularly having /f/ and /v/ for the AE /ɵ/ and /ð/ in the written form of *th* must allow the dialect speaker to set up his own reading rule, "read /f/ (or, in certain circumstances, /v/) for *th*, when not at the beginning of a word." Thus he reads /bref/ for *breath* and /briyv/ for *breathe*. Since /bref/ and /briyv/ are functional equivalents of AE /breɛ/ and /briyð/, the correct word identification of *breath* and *breathe* are made. Likewise, other reading rules will be made in other cases.

Grammatical Variables

If pure phonological differences between BE and AE do not sufficiently cause poor reading comprehension, perhaps structural interference may be explained on other linguistic grounds. Labov (*18*) and Wolfram (*11*), from their respective studies in Harlem and Detroit, contributed significant data on BE grammatical rules which may be sources of reading problems:

1. Possessive deletion
   The absence of /-s/ inflection results in
   John's cousin = John Cousin
   whoever's book = whoever book
   Deletion of /-r/ makes two possessive pronouns identical to personal pronouns:
   their book = they book
   your = you = you-all

Labov stated that possessive deletion occurred in more than half of the cases, and the possessive form presented great difficulty in imitation.

2. Verb suffix

Labov believes the third person singular was not present in BE but imported from AE in view of the low percentage use (only 5-15 percent in some cases) and the sharp class stratification between middle and working classes. He found between 50-100 percent absence of this feature in his data. There were no stylistic shift and no increase of the feature when vowels followed.

Hypercorrection occurs frequently. Wolfram found a generalization gradient highest to plural subjects (such as *we goes*) and less often to first and second persons. Some illustrations are

> Somebody get hurts.
> He can goes out. He'd knows that.
> He's gots to be nasty.
> He always bes on the beach mosta de time.
> All our men ares each on side.
> And neighbors woulds call the cops.

Torrey (*39*) found children more often understood the suffix as a tense marker than as a plural marker. She further found that second grade children in Harlem could not successfully learn it as a plural marker.

In three- to five-year-olds doing story retelling, Henrie (*14*) found third person singular omitted 72.5 percent of the time and hypercorrection on first person 5 percent. Most important, there was semantic difference. The suffix was more often deleted for active than stative, for short than for long duration, and slightly more for habitual than for long events; e.g., *Judy go to school everyday* (habit).

3. Be_2 form

There are two forms of "DO" and two forms of "HAVE" in English as in "Does he do it?" and "Has he had any?" In the

first question, they could be called DO_1 and DO_2. The second form in each case is a normal main verb. BE has a main verb Be_2 which is like other main verbs. The meaning of Be_2 is so versatile that in some instances AE has no equivalents:

(a) Habitual rather than a temporal or short occurrence

From now on, I don't be playing.
Guys that be s with us.
He be sad.
I be crying.
She always be happy.
When he *do* be around.

Henrie found Be_2 in 8.5 percent of all occurrences of any be but 21.9 percent with negatives like "*he don't be. . . .*" Labov found this form very frequent among adolescents and preadolescents, but rare in adults.

(b) Repeated occurrence

Wolfram found between 11-16 percent of frequency adverbs with Be_2 such as hardly, sometimes, usually, mostly, always, all the time.

(c) Single nonrepeated activity in the future

This practice is used in all cases where "will" is possible or where an underlying "will" could be elicited in tag questions or in negatives:

Sometime he don't be busy.
Sometime he be busy, I know he do.
He be in in a few minutes. I know he will.

The "will" deletion is due to phonological deletion rules after "will" is contracted to '11.

(d) Deletion of "would."

She just be talking, and I wouldn't listen . . .
If he didn't have to go away, he be home.

4. Copula deletion

Copula deletion is considered basically a phonological process, but it also has strong grammatical constraints which are not random. Deletion may occur with verb following, no vowel preceding, but pronoun preceding. Semantically, deletion occurs most often on short active utterances:

	Percentage
Riff eatin.	.95
He going.	.86
Riff too old.	.58
Joe goin.	.56
She real tire-	.51
Mary chairman . . .	.31

Henrie (*14*) found deletion in 28.1 percent of affirmative sentences and 15.6 percent of negative sentences.

5. Person-number agreement
   (a) There is person-number agreement for *I am, you are,* and *he is.*
   (b) There is no third person singular marker, as in most languages around the world. The preferred forms are

   He don't
   He do
   He have

   The form *vanna* is also used for *He want. Does, has,* and *says* are used infrequently.
   (c) *Was* is the preferred form for past tense of be. No hypercorrection of *I were* was found.

6. Future tense
   (a) *Will* does appear in surface structure if phonological deletion is not applied to its underlying structure.
   (d) I *gonna* may become *Ima, Imana,* or *Imo.*
   (c) "Gwine" is used for monitoring southern speech, as in "I's gwine" in parody.

7. Past tense

Phonological conditioning weakens the regular past tense as in the reduction of /t,d/ inflection:

passed = past = pass	picked = pick
missed = mist = miss	loaned = loan
fined = find = fine	raised = raisee

Henrie in his study of three BE speaking kindergarten children found that 27 percent of past forms of stem-chang-

ing verbs lacked markers. He proposes that past is not always marked even when there is no phonological deletion involved.

In one of Labov's tests the subjects were asked to correct sentences like

I've pass my test.
I met three mens.
He pick me.

Results showed the subjects typically failed to detect the absence of *-ed* for correction. In a second test, Labov investigated whether such an abstract form exists in the BE structure using sentences containing the homograph *read*:

Last month I read five books.
Now I read and write better than Alfred does.
When I passed by, I read the posters.
When I like a story, I read every word.
I looked for trouble when I read the news.

The first two sentences revealed whether the subject could recognize the time indicators "last month" and "now" to distinguish (r e d) from (r i : d). For the last three sentences, the subject encountered the */-ed/* suffix which he might or might not pronounce. If he recognized it as the past tense marker, he would pronounce *read* as (r e d); otherwise, he would be more apt to say (r i : d). Labov found that the ability to transfer the past tense to (r e d) superseded the ability to decode */-ed/* as a past signal. Thus, */-ed/* cannot function as an effective past tense marker for many black children though some can recognize and use it effectively in reading even without pronouncing it.

8. Negative forms and negation

A study of these forms should convince anyone that BE has rules as other dialects do. Limited space here allows only a few illustrations. Unlike nonstandard AE, "ain't" is used as past negative; e.g., *I told im I ain't pull it; He didn't do nothing much, and I ain't neither.* Adults use "didn't" more

and little of "ain't." Preteens use less "ain't" past than teenagers. Thus, it is not a simple age change from "ain't" to "didn't." Like Be, "ain't" is a stigmatized form but has special social meaning to teenagers (*18*).

In negation, BE seems to carry negative concord principles further than the AE nonstandard in these examples:

Nobody had no bloody nose or nosebleed.
I am no strong drinker.
She didn't play with none of us.
Down there nobody don't know about no club.

The Need to Develop a Positive Attitude Toward BE *and Its Speakers*

The previous simplified examples on phonological and grammatical rules demonstrate BE as a well-ordered, highly structured system. Insofar as it facilitates its speakers to communicate fully, it is not inferior to any other system in a true linguistic sense. Accepting this premise is of primary significance for developing a positive attitude toward BE and its speakers.

Such a positive attitude's being plainly lacking in the works of some of the educational psychologists makes the BE speaker a target for criticism. These educational psychologists consider BE to be a deficient communicative system which creates cognitive deficits. The program developed by Bereiter and Engelmann has been cited often as a glaring example by Labov (*16*) and Shuy (*35*). This program considers the language of the culturally deprived children not merely an underdeveloped version of standard English but a basically nonlogical mode of expressive behavior (*3*). To overcome this handicap, teachers are urged to proceed as though the children have no language at all and to train children to speak in fully explicit formal language. An elliptical response "He is in the tree" or "He in the tree" is unacceptable compared to an expected fully unelliptical "The squirrel is in the tree." Shuy argues that linguists take an almost exactly opposite view in that the real language structure of these sentences is the same at a deep structure level and that there are only superficial surface structure differences between them. "Linguists have observed, in fact, that many children do not produce contracted elliptical responses until they have developed the competence to

produce the full form Labov (*16*), the reverse of those who believe that this is evidence of cognitive deficit" (*35*).

Another linguistic feature ajudged by Bereiter et al as ungrammatical is copula deletion in utterances like "They mine," "He in the city," and "We doing the hokey pokey." Those who have studied children's language systematically have discovered this feature is also absent in very young white middle class children but that the middle class children develop the copula faster than the black children. As many black adults have kept the deletion "probably as a result of a long historical relationship to an early creole form" (*16*), so do the black children. But copula deletion is no reflection of cognitive deficit as many languages around the world have no tense copula—e.g., Russian, Hebrew, Hungarian, and Arabic—and in some languages, such as Chinese, it is optional (*16, 35*). Speakers of these languages are certainly not illogical or verbally and cognitively deficient. Labov further proved this BE feature is a low-level rule "which carries contraction one step farther to delete single consonants representing the verbs *is, have,* or *will*" (*18*). His studies (*16*) found young children (4-7 years old) to use the full form of the copula more often than preadolescents (10-12), or adolescents (14-17 years old).

Evidence is accumulating opposing the verbal deficit theory. Light analyzed the syntactic structures of a corpus of five black children (ages 6-11) from low income families in Washington, D.C., and found in addition to uninhibited, fluent speech the children used 10 of the 14 auxiliary verb combinations and 13 of the 16 clause patterns cited for English by grammarians. They also used two copula patterns not used in standard English but used systematically in BE (*20*).

The verbal deficit theory is based on the hypothesis developed by Bernstein, a British sociolinguist.

> Briefly summarized, his position is that the social class dialects of the British upper middle and lower classes differ not just in grammar and vocabulary, but in the way the dialects convey meaning. This difference, according to Bernstein, profoundly affects the cognitive development of children.
>
> In the lower class English dialects, the meaning of a word

> or phrase is not specific. Meaning is determined by the social situation in which the word or phrase is used. Since meaning is dependent upon the social situation, Bernstein terms this type of dialect a *restricted linguistic code*, or *public language*.
>
> In contrast to the restricted code of the lower classes, the British middle and upper class speak an elaborated linguistic code in which the meaning of a word or phrase is quite specific. The shadings of meaning conveyed depend on precise construction of language, not on social setting. For this reason an elaborated code can be described as a *private language* (*6*).

What this hypothesis has raised is the critical issue of whether the lack of an elaborated code necessarily limits the cognitive development of lower class children, particularly lower class BE speaking children. "Bernstein's schema implies a direct relationship between social class subculture and language style." Erickson suggested an intervening factor may exist between these two variables, which he termed the "shared context principle." Paraphrased in Bernstein's terminology, "When two communicators share considerable experience and point of view, a restricted linguistic code can function as precisely as elaborated code." Erickson illustrated this high and low context principle with an everyday life example. When two plumbers are loosening a pipe, A could say to B, "Now!" (high context) and B would understand that A meant, "It is time for you to hand me the medium-sized pipe wrench" (low context). In his study, Erickson concluded that both groups, the lower class blacks and the upper middle class whites, shifted back and forth between relatively restricted and relatively elaborated codes, depending on the context. The two codes "did not seem to be discrete categories directly related to shared context and also related to social class."

Labov (*16*) masterfully admonished school people that a distinction must be made between verbality and verbosity. His experience and studies conducted in Harlem convinced him the young black populace participate fully in the vernacular culture of the street but have been alienated from the schools.

The dramatic contrast between the interview excerpts of eight-year-old Leon alone with the interviewer and those when Leon's best friend, Greg, was present clearly demonstrates the necessity for

using different techniques from those being used with the teenagers in order to approach any useful results.

With the interviewer alone Leon's responses were mostly "Nope!" But when the interviewer invited Greg to join them, Leon was actively competing for the floor; and the two children talked as much to each other as to the interviewer. And it was no fault of the interviewer who was skilled and also black. Imagine what kind of results a large, friendly white interviewer got with a child alone—the same kind of defensive, monosyllabic behavior which is reported in Bereiter's work. Labov analyzed this as "the result of regular sociolinguistic factors operating upon adult and child in the asymmetrical situation."

One can be verbal without being verbose. Labov gave another interesting contrast between Larry, "a 15-year-old core member of the Jets," a teenage group, and Charles, a well-educated, intelligent, and attractive upper middle class Negro man, obviously a "good speaker." In responding to "What happens to you after you die?" Larry's speech was paradigmatic of BE with a high concentration of its various forms. Not only was his style concise, forceful, and quotable, his logical form, presented in a complex set of interdependent propositions, could be explicated and set out in linear order. Charles' language, in contrast, characterized verbosity; and although more educated, he did not appear as more logical or a better thinker than Larry.

Torrey's study (*39*) of second graders in Harlem further supported the linguists' assertion that the children leaving off *s*'s are not simply being careless in pronunciation (referring to when the *s* is not a required form in their dialect). "The one they leave off most, the verb ending, is the one they also partially fail to understand." Torrey also found that children frequently understand standard forms they do not use themselves. "This means they may be able to read and understand quite well a standard dialect which they do not speak themselves." She further concluded that some forms that are frequently omitted in BE are really partially known by the children and can be taught easily if use and meaning are made clear. These findings lead her to infer that "conclusions for education should not be made about dialect differences in general. How well dialect

speakers understand standard forms and how easily they can learn to use them will depend on which form is being considered." "Teachers should have detailed information about the differences between dialects and about the mutual comprehensibility of contrasting forms." Can teachers ignore any longer this advice?

Application of Knowledge of BE in the Classroom

While acknowledging and accepting BE in its rightful place, there is general consensus among educators and parents in the black community that standard speech should be taught in school (*3*). Reasons often cited are for better economic opportunities, social acceptability, and standard speech as a prerequisite for learning to read. Whether the first two reasons are valid is perhaps beyond the discussion here, but let's consider the last one.

Beginning Reading

There is an undeniable mismatch between BE and the AE form in books even at the beginning reading level. To remedy this mismatch, some people feel that the child should adjust to the material by learning the standard speech first before learning to read. This view in effect confuses learning the standard speech with learning to read.

An alternative would be to adjust the material to the child. Stewart and Baratz, prominent proponents of this latter view, are conducting an experiment in Washington, D.C., on teaching black children to read with specially written beginning readers. The same stories are written in two versions, one in BE and the other in standard speech (*4*). The authors try not only to better match the written language to the child's oral patterns but also to the cultural elements in the content of the stories. A story about a boy named Lester is an example (*5*):

> It is a boy live down the street from Ollie.
> He six year old, and his name Lester.
> He in first grade. Lester supposed to go to school every day.
>
> But he don't like to be sitting still all day long.
> So he always running away from school.

When he hook school, Lester need some money to buy candy,
so he stop people on the street and he say to them, "Hey,
Mister, you got a nickel?"

He don't never ask for no quarter.
He don't even ask for no dime.
He just ask for a nickel. Lester say,
"A nickel ain't too much money, right?"

So all the people give Lester a nickel.
Lester, he make a lot of money that way.
Yesterday Lester made fifty cent.

But all the other children don't care how much money Lester
make.
They think he wrong to hook school.
They say, "Lester hook school 'cause he a fool.' "

This and all other stories exemplify linguistic soundness, interest, life realism, and virtues which have been criticized as lacking in the commonly used commercial readers. However, Baratz (*6*) reported resistance to the use of the material on the part of some teachers and members in the black community in spite of general support from the parents and adequate inservice training for teachers. Such rejection then can only be explained in terms of sociopolitical factors which were unforeseen. Perhaps it is only to be expected that the black community wants to make its own choice.

A third alternative consists of using the child's own language in whatever dialectal patterns with language experience approach to motivate his interests to read. Children from the upper grades may be used as tutors to take down dictated experience stories which should be read by the child for immediate feedback and for continual reinforcement.

Hierarchy of Cruciality

Among the differences between BE and AE, obviously not all of them are of equal significance. Some matter more than the others. "Recent research of sociolinguists rather clearly shows that society as a whole ranks grammatical variations from standard as considerably more important than variety in pronunciation of vocabulary" (*36*). Shuy asserts:

> This suggests, of course, that the primary focus of oral language training should be on matters of grammar. This is not to say that all pronunciations are less important than all grammatical features for, indeed, a case could be made for the cruciality of such features as /d/ for /o/ in *these* and /v/ for /o/ in *brother*. On the whole, however, the usual pronunciation features which distinguish social or geographical dialects do not carry heavy social pressures.

Shuy further maintains that the same application can be made to reading and writing.

> Exactly how ill-thought-of is a person who stumbles as he reads orally or a person who writes a dull, ungrammatical and badly spelled composition? What little we know about readers and writers are judged by society comes primarily from teachers of both subjects, not from the general public as a whole. Is it possible that teachers of reading and writing, like teachers of oral language skills, have been attending the matters less crucial than others?

This point deserves immediate attention from teachers. Goodman and Goodman (*11, 12, 13*) also stressed the point that not all miscues are "errors" and some miscues are more crucial than others. For a black child to read "She go to school" indeed shows that he has only translated the book language into his own system. The teacher's correction would only confuse rather than help the child. Instead, the concern should be directed to his ability to speak standard speech which should be taught at an appropriate time but not during reading.

Teach Listening

To learn to speak the standard speech, the child needs to develop listening skills. Even though BE may have all the phonemes of standard speech, distribution of those phonemes in the language patterns is different. As has been stated, there are grammatical differences as well.

The interesting results of Marcus' simple experiment (*25*) illustrate the importance of teaching listening to standard speech to BE speaking children. Two questions were presented to two groups of

children, one group of standard speech middle class and the other group of BE speaking disadvantaged children: 1) If a car ran over your pet, how would you feel? Why? 2) If you could be a policeman or a fireman, what would you choose? Why? The standard speech children gave the answer as expected. They would feel sad to the first question and they would choose to be one or the other for the usual reasons in response to the second question. But such was not the case with the BE speaking children. About 40 percent answered "Good" to the first question and "Gum" the second. Why? Most probably the trouble was caused by the syntactic structure of the questions. The children retrieved only the last three words into a pattern familiar to them, "How you feel?" The rest was irrelevant. Ignoring the conditional clause in the second question, the children translated the homonym "choose" into "chews," the more familiar word, resulting in a pattern, "I chews gum," a perfectly sensible answer.

This further supports Shuy's contention that training should center on crucial points of differences.

Contrastive Drills

Contrastive drills and exercises in second language teaching have been used with some success for BE speakers. Kenneth Johnson used such techniques with tenth graders as reported in his unpublished dissertation "A Comparison of Traditional Techniques and Second Language Techniques for Teaching Grammatical Structures of Standard Oral English to Tenth Grade Negro Students Who Speak a Nonstandard Dialect" at the University of Southern California. Lin (*21, 22*) used drills in a research project with freshmen at Claflin College but felt that drills could be used in high school as well. In my opinion, with the right kind of materials, junior high or even upper elementary grade children would profit from them.

Shuy has criticized the materials used in the Claflin project and those developed by Golden in Detroit as placing a wrong emphasis on phonological differences. Again, the teacher needs to decide on the cruciality for instruction in terms of the language patterns of the students with whom he works.

Johnson pointed out that these drills and exercises need to be particularly "interesting, humorous, or provocative to maintain the attention, interest, and motivation" of the students (*7*). They need to progress at a faster pace than second language techniques with foreign students. The faster the pace, however, the more inclined these children are to slip into the nonstandard Negro dialect when they respond. Thus, they must be constantly reminded to try to respond in standard English.

Games, Role Playing, and Political Socialization

Word games such as those suggested by Mack (*24*) can be adapted for use with BE speaking children. When the word puzzle is completed, the initial letters of all the words combined spelled out in vertical position BRITISH WORDS. A glossary comparison would stimulate vocabulary expansion. Mack's example of a story "This, too, is English" is too interesting not to be adapted and tried in our own classrooms.

Role-playing has often been cited as a favorite device. Johnson stated, "Black children enjoy this activity. It is difficult, however, to have them use standard English for the duration of the role. They often become so engrossed in the role that they forget about the language (standard English) that is appropriate to the role" (*7*). Nevertheless, constant reminding and more practicing should be helpful.

Waterhouse et al (*40*) found situational role-playing and inquiry technique very popular in a summer project conducted at the University of California at Berkeley for black and Spanish-speaking students, aged 14 to the early 20s. "What determined the effectiveness of an approach was not the length of time one pursued it but the student-teacher relationship. If the approach ever let the student feel he was performing for the teacher, then his interest in it was compromised. But if the approach let the student's imagination transcend the classroom constrictions, he would ride it out into sustained performance." In fact, the role-playing situations were so successful that they were even confused with real life, and the students in developing the situations developed the material

"that they subsequently examined for its linguistic range, revised, expanded, or converted into writing."

One step further than role-playing would be to apply the techniques to real-life situations through political socialization or sociolinguistic techniques described by Ervin-Tripp (*7*, *8*). Students at all levels can be taught to observe and to differentiate the techniques of style and code-switching and to apply the various techniques to discern the power structure and to communicate effectively for attaining specific goals.

NOTES

[1] I wish to express my gratitude to Susan Ervin-Tripp for her advice, the materials she generously shared, and for reading the draft of this paper.

[2] This discussion draws heavily from Dr. Ervin-Tripp's excellent analysis in her handout materials.

[3] Dr. Orlando Taylor of the Center of Applied Linguistics reported at the TESOL conference in San Francisco, March 20, 1970, on preliminary findings of interviews of black parents on this point.

[4] These materials are in an experimental edition published by the Education Study Center, Washington, D.C.

[5] This is the first story in the book, *Friends*.

[6] It was the TESOL conference mentioned in 3.

[7] This reference came too late to be included in the bibliography. See Kenneth Johnson, "Pedagogical Problems of Using Second Language Techniques for Teaching Standard English to Speakers of Nonstandard Negro Dialect," *Florida FL Reporter*, 7 (1969).

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Effectiveness of Certain Linguistic Devices in Determining How Children Generate Sentences

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IN ORDER TO MEET the challenge of insuring optimum language development of students, educators must know more about how children advance toward linguistic maturity. Language researchers generally agree upon the need to discover the means by which children translate receptive language into expressive language. In the opinion of this writer, the problem of measuring language growth becomes one of developing instruments that can quantitatively measure language development and at the same time indicate a means of assessing growth qualitatively. To solve this problem one must focus upon the *process* by which one matures linguistically. This limited study was designed to explore developmental trends in children's compositions. If it is possible to identify specific changes in writing ability as a child matures, then one should be able to develop learning experiences through which this expressive skill can be nurtured to a level commensurate with each child's native ability and individual characteristics.

The Purpose

One major goal of this study was to explore further the use of selected quantitative measures of the structure of children's compositions. These instruments are considered to be able to reveal maturation in writing ability. According to Hunt (*2, 3*), his Synopsis of Clause-to-Sentence Length Factors is an efficient, direct means of obtaining indications of quantitative growth in syntactic structures. However, he asserted his scale needs to be checked on varying populations by different investigators.

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A second purpose of this study was analysis of the internal structure of the sentences in the writing samples as a means of discovering and adding to present knowledge concerning syntactic structures whose appearance in a child's writing indicates advancement in writing proficiency. One of the key findings of Loban (*5*) in his investigation of the language of elementary school children was that flexibility within sentence patterns is more indicative of growth than the patterns themselves. This study employed a density scale of a selected syntactic structure—expanded nominals. The instrument was designed to give the ratio of expanded nominal structures to the total number of head nouns as well as to reveal the particular manner of expansion.

Hunt (*2*) stated that the major growth in T-units (his term for what is usually conceived of as one main clause expanded) occurs in nominal structures. Since this study was limited by time and financial support, the researcher arbitrarily chose to analyze noun slots while realizing many other "growth buds" need to be studied. If expansion of nominals reveals significant ways in which one can consolidate and embed information within clauses, then language arts teachers should explore whether it is feasible to teach this skill directly while encouraging creative output.

The Procedure

All students in this study were chosen from among the members of the Young Authors' Conference sponsored by the Learning Strategy Center of Oakland University. The children who attended were selected by their peers in the local school as being outstanding composers with words. At the conference each section selected outstanding manuscripts by secret vote. Then twelve children, six boys and six girls, for each grade, one through six, were selected by the researchers from the population. Requests were sent to their teachers asking that each student write freely on a topic of his choice with the manuscript to be transmitted to the researchers exactly as produced by the student within his classroom. The researchers then made an analysis of the writing samples using the previously cited instruments.

Description of Instruments

The Synopsis of Clause-to-Sentence Length Factors contains five ratios which can be used to describe syntactic characteristics of different writers and to observe developmental trends in linguistic maturity. In order, they are 1) words/clauses, 2) clauses/T-units, 3) words/T-units, 4) T-units/sentences, and 5) words/sentences. The significant quotient for this researcher is number three which presents a mean T-unit length.

The T-unit is defined as one main clause plus whatever subordinate clauses may be attached. In exploratory studies prior to this one, the researcher noted that mean T-unit length is a more valid index of growth in written expression than is mean sentence length. If the sentence is used as the basic unit of communication, the child who underpunctuates and overcoordinates could possibly receive a higher score in language maturity. With younger children there is also a tendency to simply add words, phrases, or subordinate clauses to kernel sentences whether or not they all to the clarity and depth of thought. Thus, if one relied upon sentence length alone, he would obtain a quantitative index that would say little about the maturity of expression. T-unit length along with the other indices can give some insight into the manner in which a writer combines words and structures.

Some insight into the complexity of the problem can be obtained by presenting writers of varying ages with the same idea. For example, consider what first, fourth, and eighth graders might say about a family picnic. Each grade level could arbitrarily be assigned to represent levels of language maturity.

Level I

We went on a picnic. My mother went and my father went and my two brothers too and we stopped at a store and my dad bought ice cream. It was at Metro. Park and we ate at a picnic table. It rained on us. We waited inside a big shed and we came home.

Level II

My mother and father and I went on a picnic to Metro. Park. My two brothers went too. We stopped at a store and we bought

ice cream. We ate at a big table but we had to leave. It started raining. We waited inside a shed. Then went home.

Level III

My parents and two brothers went with me on a picnic to Metro. Park. Traveling there we stopped at a quaint country store where we bought ice cream. As we were eating rain began to fall, forcing us to seek shelter in an open shed. After waiting for some time, we left.

Consider the differences in T-unit length and sentence length in Table 1.

TABLE 1

COMPARISON BETWEEN T-UNIT AND SENTENCE LENGTH

	Number of Sentences	*Average Length*	*Number of T-units*	*Average Length*
Level I (Grade 1)	5	11	11	5
Level II (Grade 4)	6	8.5	8	6.5
Level III (Grade 8)	4	13	4	13

Looking at the number of sentences and their average length, there would appear to be minimal differences at each growth level. On the other hand, the T-unit scores indicate that while fewer thought units are being employed, the writer has matured in his ability to embed and consolidate information.

Since a researcher can determine the content of a T-unit, the problem that arises with sentence count as a result of punctuation errors can be avoided. It was clear to this researcher that the employment of the T-unit resulted in a minimal number of fragments which could not be embedded within a main clause. An example of fourth grade writing presents a situation wherein the value of the T-unit is illustrated: "Long ago, in a deep forest, in the kingdom of Zor. There was a contest held." A researcher would have to consider his criteria at some length if he were employing sentence count. On the other hand, the T-unit by definition could permit

closer accordance among researchers when such problems are encountered.

In some instances phrasals were counted as T-units. The researcher felt that the construction was grammatical in that it met the criterion of an English sentence as far as word order was concerned. It appeared in these cases that the unwritten syntactic unit was obvious in the writer's mind. These cases, though, were rare and found largely in the manuscripts of the older children.

For reasons of limited resources and personnel the researchers chose to focus upon this index. Some attempt was made to utilize the other indices as they can reveal in just what ways T-units grow longer. The researcher, however, was primarily interested in determining whether mean T-unit length increases with chronological and/or mental maturity.

The Index of Complexity of Nominals was devised by the researcher as an elaboration upon the work of Hunt. In his rather exhaustive research, Hunt classified expanded nominals and designed a complexity count as to the manner in which nouns are modified. He stated that this system is extremely laborious. This researcher attempted to overcome some of the difficulties pointed out by Hunt. Nevertheless, the Index as presently devised is time consuming; yet it appears to be most useful in revealing to some extent how one lengthens basic communication units as he matures linguistically. It also presents clues as to what we must teach in order to stimulate growth in writing.

Definition of Terms

The following terms are important to this study:

1. *T-unit*—a minimal terminable grammatical unit capable of being terminated with a capital and a period. This unit could be thought of as a main clause plus whatever subordinate clauses may be attached. We ate lunch. (1 T-unit) Yesterday we ate lunch on the patio. (1 T-unit) Because the room was crowded, we ate lunch on the patio. (1 subordinate clause; 1 main clause; 1 T-unit) Yesterday we ate lunch on the patio, and then we moved into the room. (2 main clauses; 2 T-units)

2. *Main clause coordination*—total number of T-units divided by total number of sentences.
3. *Sentence length*—total number of words in sample divided by the total number of sentences.
4. *T-unit length*—total number of words in sample divided by total number of T-units.
5. *Subordinate clause index*—total number of clauses divided by the total number of T-units.
6. *Clause length*—total number of words divided by total number of clauses.
7. *Complexity index*—total number of noun slots employed as either subjects, direct objects, indirect objects, objects of prepositions, predicative nominatives, or adverbial nouns, divided by total of a) the number of slots containing appositives, adjectives, genitives, inflected and phrasal participles, prepositional phrases, noun adjuncts, adjuncts, adjective clauses, numbers and demonstrative pronouns, plus b) the number of slots containing noun clauses, gerunds, and infinitives.
8. *Maturity*—those characteristics which occur in the writing of a child at increasing grade levels.

Preliminary Analysis of Data

Table 2 indicates that T-units tend to lengthen as a child matures in his writing ability. However, figures for grade one are inconsistent. One possible explanation is that the stories were dictated. Consequently, the mean score at this level could be a reflection of oral language maturity. It is interesting to note that at grade four the mean score rises again to approximately that of the first grade score. Could it be that young authors in grades one through three are consolidating skills?

As Table 2 indicates, the data for the Complexity Index are inconsistent for grades one through four. The researcher suggests that any or all of the following reasons may be contributing factors:

1. The scores may be more of .. reflection of oral language than written language since the fact that some children dictated their stories cannot be ruled out.

TABLE 2

MEAN SCORES OF SYNOPSIS OF CLAUSE TO SENTENCE-LENGTH FACTORS

Grade	*1*	*2*	*3*	*4*	*5*	*6*
Word count	212.0	424.1	336.3	518.3	482.0	461.6
Clause count	33.75	69.43	54.33	72.83	70.58	68.17
T-unit count	26.41	56.83	46.91	61.91	54.83	52.75
Sentence count	22.91	40.58	34.33	49.00	40.83	38.33
Clause length	6.29	6.12	6.19	7.12	6.83	6.65
Subordinate clause index	1.25	1.22	1.16	1.18	1.29	1.30
T-unit length	8.04	7.32	7.19	8.37	8.80	9.53
Main clause coordination	1.16	1.28	1.37	1.26	1.34	1.40
Sentence length	9.27	10.83	10.69	10.98	11.82	12.90
Complexity Index	1.856	1.636	1.697	2.015	1.508	1.315

2. Experimentation and testing on the part of the child of matching written patterns against auditory patterns may be taking place in the early elementary grades. It has long been held that children do not begin to show any command of written expression until this level. One possible reason for this observation is that teachers have tended to require children to use standard classroom language primarily in their written and oral expression from kindergarten onward. Yet, linguistic research tells us that children need to make a gradual transition from home-rooted and informal language to more academic ways of self-expression. Of importance, also, is that some scholars even doubt this transition should be attempted at all for fear of imposing artificial language upon the child. Nevertheless, our manuscripts from the conference reveal that young children can be creative with language if given the opportunity even though they lack control in their manipulation of written language.
3. The scores in grades four through six may be consistent simply because we tend to make children conform. It has been generally accepted by many researchers that as a result

of our traditional approach to language development, creativity begins to diminish by grade four.

4. Another possible influence upon the scores is the length of the samples. The researcher requested that the manuscripts contain at least one hundred words, with no limits set as to the maximum. In the opinion of this researcher, style may be altered significantly by limiting the length of a manuscript. The mean word count for each grade may be noted in Table 2.

Table 2 also reveals that as T-unit length increases, the Complexity Index tends to move toward one. From the research data one could assume that, in part, a more mature author writes as he does because he is gaining more sophistication in transforming and embedding information into nominal structures. A comparable study needs to be made of verb-headed structures.

The Complexity Index is obtained by dividing the total number of nouns slots employed by the number of slots expanded. As one matures, the index should gradually move toward one. A weakness here, though, is that the index alone cannot indicate the true complexity of one's writing. Thus, someone using the scale needs to look closely at the two subscores, the sum of which serves as the divisor in determining the index. It is conceivable that a young writer could obtain the same complexity score as an older writer by simply adding adjectives whereas the more mature writer would be using more clauses, verbals, etc. The mean count of slot two overcomes this weakness to some degree. It appears to this researcher that the index needs refinement into more discrete categories, with possibly an index being determined for each category. While classroom teachers would be unable to use the index on every piece of writing, they should be able to plan teaching strategies based upon the information revealed by it. A perfect ratio of one would indicate that the writer has expanded all noun slots. Such an event, however, is not likely to occur with great frequency; neither would it be desirable to seek to stimulate such a characteristic.

Analysis of individual data also revealed that the subject slot is the most often expanded. The two most frequently used structures

were adjectives and noun clauses, this trend remaining constant from grades one through six. The surprisingly frequent use of noun clauses is probably due to the type of writing which permitted ample use of dialogue. The researcher questions whether this score would be the same for other types of writing.

Referring again to the T-unit scores, it can be seen that the means did not settle down until the fourth grade. The same trend can be observed in Table 3 as reflected by the mean scores for slot-

TABLE 3

MEAN SCORES OF INDEX OF COMPLEXITY OF NOMINALS

Grade	*1*	*2*	*3*	*4*	*5*	*6*
Number of slots employed	63.16	139.41	101.	157.25	143.5	134.
Number of slots containing appositives, modifiers, etc.	30.16	75.58	50.25	66.83	80.08	86.58
Number of slots containing nominalized verbs and clauses	5.0	14.75	11.91	11.41	18.08	18.08
Complexity Index	1.856	1.636	1.697	2.015	1.508	1.315

one- and slot-two-type nominals. Again here we may be seeing the influence of the child's experimentation in matching auditory patterns against written patterns. This researcher has considered also the possibility that the characteristics measured by the research tools are not crystallized enough for accurate measurement until grade four. Noticeable again are erratic scores in grades one through three when totals for adjectives are analyzed:

Grade One—144
Grade Two—284
Grade Three—200
Grade Four—172
Grade Five—295
Grade Six—367

One of the key findings emerging from the study indicates that

we may be able to direct teachers in planning strategies that will relate more closely the teaching of reading and writing. Writers need to combine small sentences into large ones, while readers often must reverse the process. If we can concentrate on those structures which tend to increase T-unit and/or clause length, we may produce results in both areas.

The following samples taken from two of the manuscripts submitted illustrate the differences in simple kernel sentences and more mature ones:

> *Second Grade*—Tim went into the woods. . . . The fox came closer and closer. . . . Tim is a tasty chocolate bear with a big, black nose.
>
> *Sixth Grade*—I, Carla the car, would be picked for the family's transportation. . . . They don't realize it, but when they start kicking and fighting, they are hurting my delicate rib cage. . . . Please don't run my shiny new headlights into that big cement truck.

Considering such limited passages can be risky. Nevertheless, we can readily see that the second grader sets forth his ideas with minimal expansion of the main clause. On the other hand, the sixth grader expands her clauses by using more modification, coordination, and subordination.

In the opinion of this researcher, the T-unit is an efficient measure of linguistic maturation. Research indicates that as a writer matures he tends to become more adept at manipulating the phrase structure components of the T-unit. We need now to explore means of utilizing this knowledge.

Joos (*4*) has said that learning to write well is apparently about as hard as learning to play the violin well. Grady (*1*) presented a prevalent notion that teachers need to be aware of current linguistic knowledge in order to fulfill their responsibility of helping students improve writing performance. In a day that demands more efficient communication we should not overlook the implications of linguistic research.

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Linguistics and Phonics

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RECENT YEARS have witnessed a renewal of interest in phonics, as evidenced by the publication of such books as Diack's *The Teaching of Reading, in Spite of the Alphabet* (*6*), Matthew's *Teaching to Read: Historically Considered* (*10*), and Chall's *Learning to Read: The Great Debate* (*4*). The old "phonics" versus "look-and-say" controversy appears to be almost dead; for, to believe the critics, research findings seem to indicate that some instruction in phonics in the beginning stages of reading produces better results than no instruction in phonics. To a student of language, of course, this claim about the usefulness of phonics would appear to make sense in spite of what research says. It seems quite obvious that in order to learn to read, a child must somehow become aware of the connection between the sounds of human voices and marks made by human beings on paper to represent these sounds. In recent years, too, certain people engaged in studying the reading process and devising methods for teaching reading seemingly have discovered linguistics. I use the phrase "seem to have discovered linguistics" quite deliberately because I am not sure that they really have discovered linguistics. I note a lot of mouthing of linguistic terms at conferences; a readiness to use these terms in literature advertising various kinds of courses, texts, and reading series; and some willingness on the part of teachers and teacher-trainees to take a course or two in linguistics. Phonics is *in* and linguistics is *in*. To me, they are two very strange bedfellows, and it is my purpose in this paper to comment on the relationship and to offer certain observations.

Let me begin by turning my attention to what people in reading who have investigated some of the language content of phonics have had to say about that content. For example, Clymer (*5*), Emans (*7*), Bailey (*1*), and Burmeister (*3*) have been concerned with examining a body of lore called phonic generalizations. For many teachers, it

would appear that a large part of phonics consists of a set of statements, or phonic generalizations, about language. Children must learn these generalizations so that they can use them to work out what sounds are represented by the marks seen in books. If the children can apply the generalizations to the marks, the children should be able to read. The work on phonic generalizations by these investigators is of interest to us in various ways. First of all, it is of interest because the generalizations have been examined for their usefulness and found to be quite deficient. Many of the generalizations are useless because they are inaccurate, unordered, or circular: that is, they are based on a misunderstanding of linguistic facts, or they are presented randomly to children, or they cannot readily be applied. And, finally, of course, as Stauffer (*11*) has pointed out, investigations have shown that teachers themselves do not know the generalizations; and, presumably, since teachers can read, one must ask if children really need to know the generalizations in order to learn to read anyway.

As a linguist, I could explain why much of the research on phonic generalizations achieved the inevitable results it did achieve and, also, why some of the research should not have been done at all; but this is not the place to pursue those issues. What *is* important for me to note is that reading experts themselves, not linguists, produced the evidence which suggests that much of the content of phonics instruction is valueless. Let us turn, then, away from the reading experts' evaluations of phonics in order to look at the total issue of phonics instruction from the viewpoint of a linguist.

When a linguist approaches the problem of understanding just what five- or six-year-olds must accomplish in learning to read, he asks himself, what abilities do children bring to the task? what is the nature of the task itself? and what special contribution can he make to helping both children and teachers in the task? First of all, what abilities do children bring to the task of learning to read? It so happens that there is one very obvious ability that is generally overlooked: every child speaks the language. In fact, unless a child is very unusual—and by "unusual" I mean pathologically afflicted—he has usually been using an extremely sophisticated linguistic system for about three years when he faces the task of learning to read.

This linguistic system is so complicated that no adequate grammars exist to describe it, and no one knows exactly how it works. It seems presumptuous then to a linguist that anyone would attempt to teach something that no one knows very much about. And yet it seems that teachers regularly treat six-year-olds as though they were linguistically naive and attempt to teach them the language.

The second point to remember is that in learning to read, children must learn a new system—a writing system—and the relationship of that system to one that they know already—the linguistic system. Every child must learn to relate the marks in books in front of him to the meaningful arrangements of sounds that he hears around him. Of course, he might not care to learn this relationship if such learning does not seem to have any payoff for him; but, in every case, whether willing or unwilling, the task is the same. It can be conceived as either one in which the child starts from the spoken language he knows and finds out how it is written—essentially the approach advocated by such linguists as Bloomfield (*2*) and Fries (*9*) —or one in which he figures out how certain written symbols may be pronounced—the typical phonics approach and the approach advocated from time to time by various students of language, such as Wijk (*14*) and Venezky (*12*). There are good arguments to support either approach, and the choice of approach depends on one's preferences rather than on conclusive evidence from any discipline known to the writer, linguistics included. However, even though linguistics provides no grounds for making a choice, it does provide certain understandings which seem to be absolutely necessary in implementing that choice once it has been made. So the third and major point of this paper will be concerned with the nature of these understandings.

A very basic understanding that teachers must have, if they employ any kind of phonics approach, is a knowledge of the differences between *phonics*, a way of teaching reading; *phonetics*, the study of speech production; and *phonemics*, the study of how sounds function to convey meaning differences. In *Linguistics and Reading*, Fries (*9*) made much of the importance of teachers' achieving an understanding of the distinctions among these terms, and it would be well to revisit Fries frequently on this point so as to clarify the

distinction. It would be well to do so because confusion in this area is endemic in reading, as any linguist can observe, usually after less than five minutes' reading in the literature. I have already remarked that teachers have trouble enough with parts of phonics, but this trouble is compounded by the misinformation that abounds about phonetics. It would not be an overstatement to say that many books on phonics betray the fact that their writers know almost nothing about phonetics, or have never thoroughly understood what they have been told, or have some kind of hearing difficulty. In working with teachers, I often find it extremely difficult to get them to hear how people really speak. Yet the same people quite often teach phonics and advise others on such matters as speech correction, remedial instruction, and so on.

Phonetic misinformation abounds, as do unproductive ways of looking at problems. For example, the whole mythology of long and short vowel sounds, as usually taught, can work only if some meanings other than the usual meanings of "long" and "short" are given to those terms. Likewise, the use of terms like "blending" and "digraph" seems to a linguist to be less than useful, for the best way of dealing with the beginnings of words such as *bread* and *bled* is surely not to set up sets of special blends but to show the relationship of these words to such words as *bed, red,* and *led* and to deal with the *bread, bled* problems as consonant sequences, not as mysterious blends. And the term digraph seems to derive from a mixture of orthographic and phonetic information, a hopeless mixture to which I shall return shortly.

Even worse does the phonetics become when the teacher meets the dual phenomena of dialect and maturation. There is little attempt to acknowledge the fact that every child controls a remarkably systematic phonology. Instead, almost every child is found wanting; for it is the rare child, indeed, who does not get his speech "corrected" in one form or another. He is exhorted not to slur words, not to be sloppy in his enunciation, not to articulate sounds in one way but in another; not to mispronounce certain words which are said to be "habitually mispronounced," and so on. If he is really unlucky, he gets special attention in pronouncing final *r*'s in *here* and *far,* even though he is from New England; or in differentiating

which from *witch,* even though both words sound alike to him; or *pin* from *pen,* even though the teacher has her problems with these words herself, being careful to specify whether she wants a *writin'* one or a *stickin'* one—except, of course, when she's also working on final *ng*'s, in which case she says *writing* and *sticking.* All this is so unnecessary, for there is absolutely no need for teachers to behave in such a manner. A child who comes to school in kindergarten or first grade has a phonological system which is quite adequate for him. He does not need improvement of that system, even if we knew how to improve it; and writing itself is systematic. The task in phonics instruction is one of systematically relating the two systems for the child, not one of trying to change the first system—a doubtful goal—or of making it like the second system—an impossible goal. Let me add that this second goal is impossible because the task is one of teaching children to read and not one of teaching books to talk.

A final basic objection is to any notion that a child has to be taught his sounds or taught the language. Time and time again we hear that little Johnny doesn't "know his sounds" and little Johnny is enjoined to work harder to master them. It never occurs to the teacher to ask herself how little Johnny understands what she is saying to him or what, in other words, little Johnny must know in order to understand that he is being told to do something. What the teacher means is quite different from what she says. She wants little Johnny to be able to dissect words into patterns that she herself only dimly comprehends and that often as not violate good linguistic sense for a purpose which she believes is good but of which she has a totally inadequate understanding. It is rather surprising that so many Johnnys *do* learn to read even when they are taught by phonics methods, for most phonics instruction is a good testament to the resilience of children: they learn, as it were—Flesch (*8*) notwithstanding—in spite of it rather than because of it.

The procedures used by teachers in phonics instruction often deserve as much criticism as do the levels of phonetic awareness of teachers. Perhaps the biggest problem with the procedures in general is that they betray so much confusion about the relationship of sound and symbol. Letters are said to have sounds; children are supposed

to speak like talking books, and normative judgments abound. Even when more enlightened writers devise exercises for teaching certain aspects of phonics intelligently, the classroom teacher can step in the way and destroy the good work. One fourth grade boy was asked in which word, *suit* or *wool,* did he hear the same vowel as in *boot.* His answer *suit* was crossed out by the teacher who wrote, in bright red ink for all the world to see, the word *wool.* Who should be teaching and who should be taught in such a case? But it is easy to see what the problem is: a confusion in the teacher's mind between writing and speech.

Again, a linguist must protest the almost vicious circularity of some of the instruction. By this I mean that the children must already have the skills they are being taught if they are to understand what the teacher is trying to teach them. For example, one writer on phonics gives a rather complicated rule for syllabication which says that "when there is one consonant between two vowel sounds, the consonant usually goes with the next syllable, if the preceding vowel is long, and with the preceding syllable, if the vowel is 'short' or has a sound other than 'long.' " The words *robot* and *robin* are used as examples. It should be obvious that the rule cannot be used unless one already knows the values of the vowels in question; and, if one knows the values, there is no need to use the rule to pronounce the words.

I have deliberately taken a rather harsh view of phonics instruction for two reasons. One is very simply that such a view is required by what goes on in phonics. But the second reason is a mere personal one. Linguists have to some extent been associated with a method which looks like phonics instruction: elsewhere (*13*) I have called this method a neo-phonics approach. Both Bloomfield and Fries were extremely critical of phonics as it was practiced, but both wanted to stress the sound-symbol relationship which is at the heart of phonics. However, both approached the relationship from sound-to-symbol whereas phonics instruction has proceeded in the direction of symbol-to-sound. I would argue that an equally valid approach for a linguist to take would have been a symbol-to-sound one, as Wijk and Venezky have done. So all that Bloomfield and Fries did, in effect, was to look at the old problem from the opposite direction; hence, my

use of the term neo-phonics. I think that the greatest contribution of Bloomfield and Fries was not so much the idea that the direction might well be changed—for I am not convinced it need be—but their bringing to the problem of the sound-symbol relationship a good knowledge of linguistics and phonetics. I am sorry to say that this latter knowledge has been almost completely ignored.

Let me conclude then by emphasizing certain points which must provide the basis for any kind of phonics or neo-phonics instruction and which must be recognized in any kind of meaningful research activity.

The first point is that a child learning to read can speak the language and has a vast knowledge of that language. He may speak a different dialect from the teacher, but that dialect is systematic. He may also be going through some maturational developments in his articulatory abilities, but we can do almost nothing about these and probably should not try to either.

A child's language is a fully integrated, well-functioning system. The written language that he must eventually read is also systematic. Teachers must try to understand *both* these systems, for the task is one of helping the child to relate them. Phonics should provide a systematic way of relating the two systems.

In order to provide this relationship, phonics instruction should not involve speech correction because most of this effort is wrongly motivated; should not demand dialect change, because such change is almost certainly quite unnecessary; and should not perpetuate linguistic and phonetic misinformation.

Finally, the whole notion of deductive teaching needs to be reassessed in the light of a better understanding of the child's task and abilities, and those parts in such teaching which obviously contradict one another or are viciously circular must be abandoned immediately.

If "phonics" instruction, as Chall suggests, has indeed proved to be better than "look-and-say" instruction, when the two have been put into competition, this is a remarkable fact; but I suppose a fact. How much better a "scientific" phonics would be than the pseudo-scientific one that we have at present I can only speculate. In this paper I have suggested that some basic insights from linguistics can

be of use to teachers who use phonics and to researchers who wish to investigate the usefulness of phonics as a way of teaching reading. Let me conclude on a lighter but not really less serious note by saying that I marvel very often how wonderful children are to do what they do and to achieve what they do in spite of teachers, parents, look-and-say, phonics, linguistics, and all the rest of the mad world we surely live in!

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How Children Develop Concepts of Language

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DURING the past five years studies have produced direct evidence that the way in which children think about the task of learning to read has an important effect on their progress in developing reading ability. Children's linguistic concepts and their understanding of the problem-solving operations to be learned in relating written to spoken language may even constitute the most important factor in reading readiness.

Earlier Studies of Intelligence

These recent findings should not be surprising. Earlier research contained generalized indications of the importance of children's thinking as a factor in learning to read.

Numerous investigations have confirmed the high correlation between general intelligence and reading achievement. Although some writers have recognized that the causal connection may not be simple, several have concluded that general intelligence is the most important factor in determining reading progress, e.g., Tinker (*13*). These research findings fit very well with the classroom teacher's observations. Reading involves mental operations which obviously require intellectual ability. The ultimate goal of reading is the comprehension of the communication transmitted by the author's writing. This process involves, at least, the use of intelligence in understanding and interpreting the author's ideas. Furthermore, learning to read requires the use of intelligence in the development of new concepts of linguistic elements such as "word," "phoneme," "letter," etc. It also requires intelligent reasoning and problem-solving operations in developing the skill of decoding the written form of language back into its primary spoken form.

Visual and Auditory Discrimination

Tests of visual and auditory discrimination have been found to have slightly higher correlations with reading attainment than tests of general intelligence, e.g., Durrell et al (*6*), Harrington and Durrell (*8*), Nicholson (*9*), and Thackray (*12*). Some educators have interpreted these findings as minimizing the importance of general intelligence, but this is a fallacy. In fact, what these studies show is that intelligence is even more significant for reading readiness when it is related directly to behavior specific to reading, i.e., in this instance, visual and auditory discrimination.

Concept Development and Reasoning Abilities

Similarly, one would predict that the development of concepts and reasoning abilities which are specific to learning to read and write would be heavily loaded with the factor of general intelligence; but, because of their specific relevance, they would be still more highly correlated with achievements in reading than are tests of general intelligence.

Correlational research on these cognitive factors in the development of reasoning abilities and concepts specific to the task of learning to read has not yet been conducted. However, trends in other investigations suggest quite strongly that these cognitive factors may be of great importance for learning to read.

Piaget's research (*10*) shows the marked difference between the logic of older children and the logic of children typically in kindergarten and first grade in American schools or at the infant school level in Britain. Abstract concepts represent a particular difficulty for the younger children. More specifically, Vygotsky (*15*), in his research on the young child's first approach to the written form of language (in Russia), discovered that "it is the abstract quality of written language that is the main stumbling block" in developing literacy. These findings indicate that those aspects of the young child's developing logic and concepts which are specifically related to language are likely to be crucial for learning to read.

"Cognitive Confusion"

After reviewing all previous investigations of the causes of reading disability, Vernon(*14*) concluded that there was one symptom of failure which occurred more frequently than any other:

> Thus the fundamental and basic characteristic of reading disability appears to be cognitive confusion.

She defines "cognitive confusion" as follows:

> The child with real reading disability . . . may indeed have learnt that printed words have some relation to spoken words; and, with a few simple words, he has memorized the spoken word that corresponds to a particular shape. *But he does not seem to understand why;* it might be quite an arbitrary association. *He appears hopelessly uncertain and confused as to why certain successions of printed letters should correspond to certain phonetic sounds in words.*

Vernon proposes that "to make this association demands *a particular type of reasoning process,*" and that in reading disability, "the fundamental trouble appears to be *a failure in development of this reasoning process.*" She considers that the retarded reader is a student who *"remains in a state of confusion over the whole process."*

Cognitive Clarity

From Vernon's description of cognitive confusion in the retarded reader one might hypothesize that the normal reader would exhibit, in contrast, cognitive *clarity* in this "particular type of reasoning process" involved in learning to read. The normal reader should understand why the written and spoken forms are related. He should be certain and understand clearly why certain successions of printed letters should correspond to certain phonetic sounds in words. Furthermore, in the normal beginner one would anticipate that there would be a developmental sequence from the earliest stage of normal cognitive confusion to a later stage of normal cognitive clarity. Vernon's "particular type of reasoning process" should be observable as a developmental process in beginning reading.

This development from cognitive confusion to cognitive clarity is clearly discernable in the series of intensive studies of twelve English five-year-olds conducted by this author, with technical reports of these investigations available in two articles (*3, 4*). A fuller account of these children's initial concepts of language has been presented already in a previous article in *The Reading Teacher* (*2*). What follows is a brief description of how these children's linguistic concepts developed at later stages in their first year in a British infants' school.

New Research Evidence

These twelve five-year-olds were studied three times during the first school year. Each had individual conversations with the author about topics related to language, books, and reading. A number of concrete examples of the use of written language was presented to the child and discussed. Also, each child was a subject in two experiments. The first was designed to discover what was the child's concept of "word," and the second probed the child's concept of "sound." Each experiment was repeated in the three phases of the research: Phase I, two months; Phase II, six months; and Phase III, nine months after first entering school.

The results of all the methods used showed in two ways the importance of the development of cognitive clarity from phase to phase of the research. First, in the majority of cases cognitive clarity increased with time and was associated with developing reading and writing abilities. Second, the individual differences between the children's progress represented differences in the growth of cognitive clarity.

Dimensions of Cognitive Clarity

This developing cognitive clarity appeared in five chief dimensions:

1. *Understanding the communication purpose of the written form of language.*

These children became increasingly aware that writing in books and other places is another way in which people communicate with

one another. All the children were comparatively vague about this in Phase I, a condition which confirms Reid's earlier finding (*11*) that such young beginners have "a general lack of any specific expectancies of . . . the purpose and the use of it" (reading). Similarly, Vygotsky found that his Russian beginners had "only a vague idea of its usefulness." In this new research, the faster-developing children more quickly understood the communication purpose of written language. In contrast, the three slowest children continued to be vague about its purpose even in later phases of the research.

2. *Concept of visual symbol*

This concept is related to dimension one but seems worth a special, separate description because of its particular interest to the teacher. The concept manifested itself mainly in the children's responses to requests that they should write something for the interviewer. The lowest level of development seemed to be a confusion between "draw" and "write" but gave way by degrees to a clear differentiation between these two operations.

3. *Concepts of abstract parts of spoken language*

None of the twelve children developed a clear concept of "a word" as a unit of spoken language. There were indications of development in this direction, but the most advanced children generally responded as if a spoken sentence or a spoken phrase could be "a word" as well as an actual, single spoken word.

Four children did narrow their concept of "a sound" to exclude all other auditory stimuli except the phoneme. These children were all in the group which displayed the fastest development of cognitive clarity in other ways. Their responses in the experiments designed to discover their concept of "a sound" indicated a series of hunches which led the subjects further and further out of the fog of cognitive confusion about the meaning of such linguistic terms.

4. *Technical vocabulary of language learning*

These children's development of cognitive clarity also found expression in their broadening vocabulary of technical linguistic terms and in the accuracy with which they used them. At the lowest

level of development the technical terms for "word," "letter," and "number," were not known. Later, the children appeared to experiment in applying them, at first with much confusion but gradually with the faster developing children using such terms more and more precisely and accurately. The two or three children who showed little development of cognitive clarity about the whole process had few technical terms which they used in rather random fashion even at Phase III of the study.

5. *Understanding the decoding process*

Those children who developed cognitive clarity rapidly showed a corresponding improvement from phase to phase in this study in their understanding of the purpose and process of decoding graphemes to phonemes in reading and of encoding phonemes to graphemes in writing. The slowest developing children, who remained in a state of cognitive confusion at the end of the year, had no understanding of these decoding or encoding processes.

Practical Implications

a. The aims and methods of prereading and beginning reading instruction should be adapted to the child's view of language which may not include such concepts as "word," "sound," "symbol," "write," and "read."

b. It is of vital importance that methods of teaching reading and writing should reflect in obviously genuine situations the true communication and expressive purposes of the written form of language. Some practical suggestions for achieving this correct orientation from the outset are provided in Downing (*5*) and Gayford (*7*).

c. To facilitate the growth of cognitive clarity, the development of the basic concepts of language and of the relationship between the parts of spoken and written language should be deliberately fostered. This growth cannot be achieved by verbal formulas or by rote learning of, for example, the letters of the alphabet, whether i.t.a. or T.O. Instead, children need a wide range of personally relevant, concrete experiences which contain clear and unambiguous examples of the concept to be derived. Systems such as i.t.a. can be a helpful aid in providing a clear visual representation of the phonemic structure of

language, but often this advantage of i.t.a. is lost because the teaching methods divorce the school reading and writing from the real-life spoken language of the environment outside school. Several alternative and very different methods of teaching i.t.a. have been described in a previous article by Downing (*1*).

Conclusion

In the previous paragraph, i.t.a. has been mentioned chiefly because of this present author's known concern with the original research on i.t.a. To prevent overemphasis on i.t.a.'s significance in the problem discussed in this article, it should perhaps be stated explicitly and with some force that i.t.a. is regarded as only one possible way of assisting the child to develop a clearer understanding of some of the concepts important in developing cognitive clarity. It is this general goal of cognitive clarity which is stressed. Both the review of previous research on cognitive development, intellectual abilities, and reading retardation, on the one hand, and the direct evidence from this author's own developmental studies, on the other, seem to indicate that how a child moves from cognitive confusion to cognitive clarity in what Vernon has called the "particular type of reasoning process" of learning to read may be the most fertile field for future research in reading.

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The Child and His Language Come to School

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BASIC to our interest in reading is our interest in children, for we are interested in reading primarily because of what reading does to and for children.

Reading interpretively, with understanding, does a great deal for children. Through reading they are able to grow and develop into well-informed citizens. Reading with understanding brings its own reward in pleasure and information gained from the earliest beginnings to adult levels of reading.

Reading as a process of word-calling without understanding or interpretation brings little or no satisfaction. Any ideas the reader gleans from the printed page are often not those the author intended to communicate. Reading becomes a fruitless chore if the child gets nothing of value from it. He becomes bored, resentful, discouraged, or apathetic.

Underlying the interpretive skills of reading are the interpretive skills of language. To use a language-experience approach to teaching reading, the teacher needs to explore first the language that the children bring to school. She then assists those who need help in developing the language vocabularies and syntax that they will encounter in their early reading efforts.

Most children come to school already talking. They talk as naturally and freely as they breathe, walk, and play. Many five-year-olds have already learned a tremendous amount of language in their short span of years. They command thousands of words which they put together in word groups and sentences. The words they use have the same meanings and follow the same patterns of syntax that are used by their parents, friends, and other adults in their community.

As they talk, they do not know the grammatical terms for the relationships of words in syntax any more than they know the names

of the muscles they use when they hop, skip, or jump. Yet they do all these acts easily.

Children are social creatures, and their language has a purpose. They want to communicate with others, to make known their needs, to share experiences, and to participate in the activities of their families and friends. Children are also curious, imitative, and playful. They play with words and sounds. They are delighted with rhymes, jingles, and alliteration.

The language children bring to school reflects the poverty or richness of their environment, the width and breadth of their experiences, and the concepts they have developed in their contacts with others. The excellence of their language depends upon the quality of the verbal interactions within their environment.

Language develops through social contacts. It follows that children who have not developed happy relationships with other children of their own age may be handicapped in their progress in language.

A teacher who fosters language in the kindergarten, therefore, sets the stage for developing good social-emotional adjustments. The shy child needs to be drawn into the group. The hostile child needs to find that the teacher is worthy of his trust. The fearful child needs to find his anxieties allayed in the cheerful protection of the classroom. The unloved child craves friendship with a teacher who cares. The discouraged child whose first response is "I can't" needs to readjust his self-image to discover that he *can*.

It is not surprising that in a classroom of children who have just entered kindergarten there is a wide range of individual differences in both the quality and quantity of the oral language brought to school.

Sooner or later in the child's early life he makes an important discovery. He finds that there is another system of language that is closely related to the one he hears and speaks. He discovers visual language, the printed and written symbols for oral language. When he sees others reading and writing and when he listens to stories read to him, he becomes curious about print and wants to learn to read and write by himself. He may not have discovered that print stands

for language before coming to school, however, if his home is devoid of books and no one has ever read to him.

Communication by language is a four-lane bridge between communicants over which ideas are interchanged. The four lanes are listening, speaking, reading, and writing. Grammar is the road bed upon which each lane is built. All verbal skills use about the same grammatical arrangements of words in sentences, although oral language is more abbreviated and informal than written language. Only the neurophysiological mechanisms shift when the lanes are changed. The sensory and motor pathways used by an individual depend upon the purpose and mode of communication.

The various language skills, although related to one another are not acquired at the same time nor at the same level of proficiency. Oral language is acquired first. Children react meaningfully to words they hear before they begin to speak the words. Then listening and speaking grow together. Poor development of oral language is a frequent cause of difficulty in learning to read and write. Many children show an uneven development of oral language skills. There are good talkers but poor listeners, little chatterboxes who talk fluently and incessantly but seldom listen to others. On the other hand, there are good listeners who do not express ideas well orally. And there are children who fail to learn to read or write in spite of excellent abilities in oral language because of difficulty in the visual, motor, and associative skills required in reading. Progress in learning to read and write also takes place at different rates and in different sequences with various individuals. Some children learn to read easily but have trouble in writing and spelling. Others seem to learn to recognize words only when they spell out or sound out the letters. Some children develop beautiful handwriting but cannot produce well-organized sentences or paragraphs. Teachers recognize many cases of uneven development in all the language skills which persist among pupils at every grade level.

In many situations both at home and at school an individual changes rapidly from one language skill to another. In a conversation or discussion he shifts from listening to speaking, back and forth. During a reading lesson he may stop to ask the teacher a

question and listen to the reply. After the class has read a story, the children may shift from reading to discussion.

An upper-grade pupil may search in reference material for the facts he needs in an assignment. He may take written notes and then speak from the notes as he reports his finding to the class. Children who watch television programs often shift between listening and reading when a commercial package is exhibited showing the trade name while the announcer discusses its uses.

The entire gamut of communication skills is so interrelated that it seems economical of time and a very natural procedure to teach them together, stressing one skill or another as needed.

Developing Language for Success in Reading and Writing

The kindergarten is the transition period during which children make an adjustment from home to school. It is also the period during which the child prepares for the transition he is to make from oral language to printed language. It is the period in which the teacher first analyzes the oral language which the child brings to school and helps him to develop an understanding of the words and syntax used in books. Kindergarten teachers have long recognized the need for developing oral language in the curriculum. Too often, however, after the child leaves the kindergarten, elementary teachers may stress the recognition of printed words in reading without making sure that the child has the language skills essential to understand the meaning of the words in the sentence he is trying to read. Too often the reading program is separated from the basic language skills upon which children depend for meaning. Although the teacher may wish to have a separate period in which to stress reading skills, reading cannot be taught effectively apart from the other basic language skills.

Language development is a continuous, sequential process of learning, of enlarging vocabularies, and of adding new meanings to words and word-groups at every level from kindergarten through adulthood. We never stop enlarging our vocabularies and adding new connotations to words throughout our total life span. We older citizens may lose the speed of our reactions when compared with

our young folks. Our eyes and ears may become less acute with age, but our vocabularies never need to cease to grow. If we stop learning new meanings for old words, we lose our ability to communicate with the youth of our nation. The generation gap develops and widens partly because we fail to keep open the paths of communication.

Both children and adults need to continue at every age level to enlarge their knowledge of language meanings. Beginning readers need to do so in order to interpret the language of books. Adults need to do so in order to continue to communicate with youth. And young people need to do so in order to understand the historical past.

Let me digress here with a few examples of children's misconceptions of meaning brought about not because of failure to decode printed words but because of limited experience with the variant meanings of words.

In a nature unit on birds, a fourth grade class was once assigned an article to read about the swallow. At the conclusion of the reading, the teacher asked a number of questions about the life and habits of swallows.

"And where," asked the teacher, "does the swallow get its food?"

"The swallow," said Susan, "gets its food by eating the insects that are on its wings."

"Why, Susan," said the teacher, "where did you get an idea like that?"

"That's just what the book said," replied Susan.

"Show me," directed the teacher, and Susan triumphantly read the following sentence from the book:

"The swallow eats insects while on wing."

Many of the misconceptions of young children occur because they know only the literal meanings of words. Such children are lost when they do not know the changing connotations of words in context, such as *while on wing*. Words in sentences derive their meanings from the context in which the word is read.

The primary goal of a language program in the kindergarten, as at every grade level, is communication. It is not too early to begin to analyze the language concepts of children on the first day of school. When the teacher asks the children to *form a line* by the door so

that they may go out to the playground, how many of the children simply stand by the door with no notion of what *forming a line* means? When the teacher asks Peter to stand by the door and Mary to stand *behind* Peter, where does Mary go? After the children are on the playground, do they know what is meant by *taking turns* on the slide or on the swings? While the children are drawing, can they follow the direction "*draw a line*" or "*draw a circle*?" Perhaps they can do this but do not comprehend how to *form* a line or *form* a circle. While dancing to music can they *turn around* without watching others do it first? There are many opportunities in the kindergarten to introduce children to the variant meanings of words. When the children *wave their hands,* does anyone know another meaning of *wave,* such as the wave at a beach?

Some children may be so lacking in language meanings that the teacher may need to demonstrate the literal meanings of words such as *behind, before,* or *between.* She may need to help them to differentiate the meanings of *in, on, over, under, around,* and *through.* Some children may have to learn the names of familiar classroom objects such as *pencil, eraser, crayon, chalk, brush,* or *paint.* Words acquire meaning through association with objects and actions. The kindergarten teacher who is alert to language problems will note the child who gets his *crayons* when she has asked him to get a *pencil.* He may never have used these objects at home and has only a vague idea of what a pencil is.

Of course, the language that is taught in the kindergarten extends and refines the concepts that the children bring to school. If the children come to a neighborhood school and are in the same cultural and economic environment, most of the children will use the same basic words and meanings and similar syntactical arrangements of words. Even in the same cultural group, however, there are individual differences in the children's concepts. Some children may have developed advanced abstract concepts and words and some may be still at the concrete level of word meanings. Nevertheless, the group can usually communicate with one another. If the children in the group come from widely differing cultural areas, however, the problem of verbal communication may be more difficult. When Henry says he had *pone* and *sop* for dinner and Robert says he had *brocolli*

and *steak*, the two boys may have very little idea of what the other one ate. Most of the children may understand what Tom means when he says, "*Them kids ain't play fair*," but Tom may have difficulty in learning to read a sentence beginning with the words *those boys* because he simply would never start a sentence of his own in that way.

The transition from oral language to written language is usually an easy one for children who hear academic English spoken at home and who have been read aloud to since infancy. One of the best predictors of ability to read may prove to be simply the number of books in a child's home and the number of hours a week parents read aloud to their children.

To make up for the lack of book experiences in the homes of disadvantaged children, the teacher needs to read aloud frequently at school and then leave the books on a library table for children to browse through during their free periods. As the children examine a book, look at the pictures, and recall the story they heard, they remember some of the exact words, phrases, and sentences that were used.

The children may translate the standard English sentences into their own dialect in retelling a story, such as, "Goldilocks done et up de baby bear porridge." The translation indicates that the child is understanding the meaning of standard English but still prefers to express the idea in his own dialect. After hearing the story reread several times, however, the pupil may begin to use more and more of the phrases in the book.

The teacher will try out various books for interest. Any book which does not arouse a rapt look of attention can be discarded, and the teacher will search for another book or story to which the children give total attention and for which they have an appropriate background of experiences. In this way she uses an empirical method of fitting books to the interests of the group. We need more good stories about children in urban settings although not all stories should be so placed.

Many books are available now with records or tapes made by expert oral readers. Children enjoy learning to play the machine and listening over and over to their favorite stories. They turn the pages of the book to locate the pictured episode being described on the

tape. These materials provide the children with freedom of choice. The records do not take the place of a teacher who reads aloud and shows the children the print under the picture or on the page. It is necessary for children to learn that the print gives clues to the teacher as to what to say as she reads. But the records to enable more frequent repetition of stories, save the teacher's time, and permit children to hear the stories they like best again and again.

The teacher stimulates interest in words by using an unfamiliar word in a rhyme or story to start a word game. For example, after reading *Little Miss Muffet sat on a tuffet* and explaining that a tuffet is a kind of footstool, the teacher may ask the children to name all the kinds of furniture they can think of that people sit on—a stool, a footstool, a chair, etc. Next, she may ask, *What is the difference* between a high chair and a rocking chair? Between a chair and a bench? She may extend the games as far as the children can go in their own vocabularies and in learning new words. It takes a good descriptive vocabulary for a child to explain the difference between a bench and a davenport, for example. As the children try to express the differences verbally, their ideas become more exact. They notice details and select words with greater precision as they try to give an exact description.

The teacher may then set the children searching for different ways to say the same thing. When Mary asks Susan to *hand her a pencil,* the teacher may ask the class to think of other expressions Mary could have used, such as *bring me a pencil, get me a pencil,* etc. Some child may suggest that *please hand me a pencil* would be a more polite way to ask for one. When Joe says *"I ain't got no pencil,"* the teacher can suggest that another way to say that would be *"I haven't any pencil."* She doesn't make Joe feel that his speech is wrong. She respects his ability to communicate his idea. But she tries to develop in Joe and in the class the understanding that there are different ways to express the same idea.

A wise teacher never embarrasses a child about his language. His way of speaking is simply to use the language he has heard at home and in his community, and it is appropriate for him to speak his own way among his family, friends, and neighbors. If he uses his own dialect well enough to get across his idea in communication with

others, he deserves praise instead of reproof. He has demonstrated his ability to communicate. As he mingles with other children in the kindergarten, his language will undergo growth and change in the direction of the common usage and pronunciations of the group. If most of the children speak a standard variety of English at school, his language will become more like theirs. If, however, most of the children in the group talk the way he does, then it follows that the ones who speak standard English will begin to speak with the characteristic dialect and syntax used by the majority of the class. It is only natural then that the parents of children who speak academic English are shocked at what they feel is a sudden deterioration of grammar in the school.

Language is a very personal thing. It is largely through language that we express our thoughts, and it is through a child's language that the teacher grows to understand the child. It is hard for anyone to separate himself from his ideas. If a child feels that his language is rejected or that his teacher does not like it, the teacher's feelings will be taken personally. Instead of changing his language he simply stops talking to his teacher and classmates, and his growth in language is stymied.

It is a careful path that a teacher must walk to keep the confidence of children and at the same time to help them grow into using the standard English that they will find in books.

Word games help the child to externalize his language and to gain power over it. When he finds that he may frame his thought in different words and can change those words at will and when he can select the words that best express his meaning for the occasion, he is no longer chained to the language of a limited neighborhood. He may enjoy and respect the language of his home and friends, but he may also feel that he belongs to a wide community of educated people at large.

Assessing Individual Differences in Language

One of the first problems of a teacher is to identify the language characteristics of her class. A good way to start is to make tape recordings of conversations during many activities. At first, the children

will be curious about the instrument. It is a good plan to satisfy their curiosity by demonstrating how the tape recorder works. As a tape is replayed, each child has the fun of identifying his own voice. During the demonstration the teacher also learns to identify the voices of individuals so that she may analyze not only the language of the class but of selected children. Before long the children will become accustomed to the recorder and will be able to direct their attention to the content of the lesson without being disturbed by the instrument.

After obtaining a number of samples of the conversation of the group, the teacher may replay the tapes and record her observations about language on a set of cards. She may first listen to the tape for oral participation. Which children talk most frequently? Which children seldom participate? She will jot down the names of the five or six children who are the most and least frequent participants. The children whose names do not appear on the card may be considered as about average in oral participation.

Next, she may listen again to the tape for sentence length as she jots down the names of the children who use the longest or the shortest sentences. It is a good plan for her to write down on the card a few verbatim samples of the longest and shortest sentences. In recording sentence length the teacher will discard sentence fragments as it is a natural characteristic during conversations for people to abbreviate replies in terms of context. To obtain samples of sentences in which to count the words in determining sentence length, the teacher will want to use only the complete sentences found in a child's spontaneous speech. And it is better not to count as one sentence a number of sentences which are connected by *and*. Many children connect almost all their sentences with *and* when they tell an experience. For example, "We went to the store and I saw some balloons and I bought a red one and . . . and . . . and." The word *and* has become just a time-filler in the child's speech. If *and* contributes to the sentence meaning, count it: e.g., "Mother and I went to the circus. The lion tamer cracked his whip and the lion jumped through the hoop."

The teacher may listen again to the tape to locate children who do not use standard English syntax. This time she jots down the

names only of the children who use such sentences as "Bill taken my eraser." "I be late, my mom ain't get up." "Who done that?"

The teacher may listen to the tape also for difficulties and differences in pronunciation. She jots down the names of children who use infantile speech, such as "Tan I path the thissorth," foreign accents, such as "*My mudder*"; and dialectic consonant omissions, such as *dess* for *desk, pahk* for *park* and so forth. She may also note children who stutter or have articulatory difficulties.

On the basis of the analysis of sample conversations the teacher may determine the range of individual differences and the types of language difficulties present in the group.

Just as teachers often divide a class into reading groups for instruction, the teacher may also divide the children into groups for specific training in language. The entire kindergarten group will participate together in such activities as Sharing Time, Show and Tell, News, or whatever the period is called in which the children talk freely about their experiences. They all participate in Story Time activities in which they listen to books read aloud by the teacher. All the children participate in dramatic play, in science activities, and on the playground. In these general activities each child uses his own language or imitates the language he hears in the group.

A small group of youngsters who have special needs in language are brought together for specific purposes. Those youngsters who seldom volunteer in the large group may find their tongues in a small group as they feel at ease and receive more of the teacher's personal attention. The teacher may extend their meager vocabularies as they learn to name unfamiliar objects in the classroom. The children may practice using such phrases as *I saw*. The teacher asks them to look out the window on a rainy day, for example, to see what they can see. Then the teacher says, "Tell me what you saw, Tony." Begin by saying "I saw." By starting Tony with the wanted phrase, "I saw," the teacher can prevent his usual "I seen." Simple games of hiding and hunting for objects can be used to practice the phrases *He hid, He put, I found,* instead of the customary *He hided, He puten, I done found* and so forth. After playing store the teacher can elicit the phrase *I bought* to replace *I buyed* or *I boughten*. Guided re-

sponses worked into a game provide the practice needed to habituate standard past tense forms of English. Not all children need this practice—hence the desirability of playing the games in a small group. The actual phrases to be used in the language games are to be selected from the tapes of conversations which the teacher obtained earlier. Thus, her selection of phrases for practice will result from the actual needs of individuals in the group.

Too often in building a curriculum, educators analyze the content of what is to be learned rather than the needs of children who are to learn that content. This may be one of the reasons for the protests of young people that many courses they take are not relevant. Kindergarten teachers, as a rule, do build on children's needs and are usually free from the demands that the child cover a specific amount of content during the year. Even at the kindergarten level, however, the teacher can create a program more relevant to individual needs. Teachers should have the freedom to select and to be creative, but they should also know what to select in the light of both children's needs and educational goals.

Meeting Individual Needs

No child or group of children has exactly the same needs in preparation for reading and writing. Children have individual abilities, experiences, and learning habits. Children differ in sensory perception, in motor control, in methods of learning, and in motivation for reading as well as in the quality and quantity of language which they have achieved.

In acquiring oral language they have used the sensory channels of hearing and the motor channels of vocalizing sounds. They have used the central associative mechanisms that relate sounds to experiences and which give words their symbolic meaning.

In acquiring visual and written language the neural mechanisms become even more complex. Reading and writing require visual perception in addition to the coordinating neural mechanisms that relate seeing and hearing with each other and with the oral language systems of listening, speaking, and comprehending meaning. In writing our language children coordinate hand and eye movements

with the complex network of associative connections already established in the brain. Just how all this activity happens in one small child is beyond the knowledge of most of us.

We do know that many things can go wrong with the process. It is not remarkable that things go wrong; it is rather to be marveled that things so often go right and that so many children learn to read and write at such a tender age. The amazing part is that most children do accomplish the complex acts of listening, speaking, reading, and writing.

As teachers, we can provide the opportunities, methods, and materials and set up motivations for learning. But we must adjust constantly to individual differences and be alert at all times to any condition that may block the smooth performance of any child.

One way to help the child to get ready for visual and motor language is through his drawings. Long before primitive man found a way to write language he communicated through pictures. He drew pictures of animals on the walls of caves. He portrayed hunting activities. He drew likenesses of what he saw in nature, the sun, rain, mountains, and rivers. Some of the pictures show remarkable ability in drawing. Other early drawings show that primitive man used them to portray symbolic meaning, such as a drawing of three suns which meant three days.

The drawings of young children express their ideas, too. Their drawings and paintings have communicative value in telling a story or experience. Sometimes the drawings merely communicate mood or motion. Finger paintings often express feelings through the colors selected and motion of the strokes.

After Charles has made a picture, ask him to tell what the picture is about. In this way he associates language with the picture. He may simply name something, "It's my dog, Taffy." Or Susan may say of her picture, "It's just about yellow." You may then comment on the drawings with a descriptive word or two.

At another time you may show the class one of John's pictures and ask, "What do you think John is telling us in this picture? Don't tell us now, John, until we have tried to guess." Encourage the children to talk about John's picture, "What is it? Does it tell a story?" After the children have guessed ask John what his picture is

really about. John can then tell his own idea. Expose some of the pictures that are just blobs of paint or scribbles as well as representations of objects or people. In a class where the picture presented was simply an irregular mass of purple paint some children guessed, "It's a hippopotamus," "It's a monkey," "It's some rain clouds," "It's a flower." The young artist was greatly amused at each guess and finally said, "No, it's the dark when my mother turns off the light." Children enjoy displaying their pictures and tell many unexpected but revealing things about themselves both in their own pictures and as they interpret the pictures of others.

In the drawing activity, children are incidentally learning the names of colors. They are learning about forms and strokes, too, as you use such words as round, square, pointed, straight, curved, circle, and so on in your comments. They are making more careful visual observations as they draw or paint when they want the objects to be recognizable. They are gaining in motor control.

The teacher may also suggest that everyone draw a circle and use it as a part of a picture. Some children may put in eyes, nose, and mouth to make a pumpkin face; others may draw a line down from the circle to make a lollipop or a balloon. The possibilities are limitless and give visual imaginations a chance to grow.

Beginning with a circle, a square, a rectangle, a triangle, or a half circle, the children try their creative abilities to draw as many different things as they think of that have those shapes. They are becoming familiar with naming and drawing basic forms and are learning to use many of the strokes they will need in handwriting. This activity may be called a drawing game to distinguish it from freehand art.

When the children tell about their freehand pictures, the teacher may ask them to think of a title for the picture. The teacher writes the title on a strip of paper and tells the child each word as he watches her write it, such as *My Dog Taffy*. The pictures may be displayed with their titles on the bulletin board. Each young artist has the pleasure of reading his caption from memory under his own picture. In doing so, he is learning that a printed word is made of letters; there is a space between each word; and there are just as

many printed words as there are oral words. He learns to point to the word on the left side of the caption first and then to point in sequence to the rest of the words in the title.

Of course, the most important word to the child is his own name. Early in the year he may be given a name card on which the teacher has printed the child's first name in manuscript writing. By scattering duplicate name cards on the floor around the room the teacher may call for a *name hunt*. Pupils walk around the room to match their own name cards to the ones on the floor until they find their duplicate card. Children ordinarily match the large capital letter at the beginning of their name first. If Betty brings Bobby's card, the teacher may praise her for finding a name that looks like hers, but the teacher then points out the difference. Before long the children can easily find and read their own names.

The teacher now may find many uses for the names. She may draw pictures to represent classroom duties. A picture of a fish may represent feeding the fish. When Harry finds his name posted by the fish picture, he knows that it is his turn to feed the fish. When Alice finds her name by the picture of the watering can, she knows that her duty is to water the flowers. Thus, reading one's name becomes a purposeful activity from the first.

The process of writing should be started as soon as the child has developed a clear-cut image of his written name through the card-matching activities. Some children come to kindergarten already able to write their names, but they usually write using capital letters. The teacher may congratulate them for their ability. She tells them that they are now old enough to write the way the big children do at school with a capital letter first and with small letters following. The first writing children do is simply freehand drawing on an unlined sheet of paper.

The child's first attempts to copy his name are revealing. Where does the child place the name? Does he place it well in the middle of the sheet or in a tiny corner? Does he make the letters of fairly uniform size? Does he draw a few letters so large that he runs out of space and has no room to finish the name? If so, how does he solve the problem? Does he reverse any of the letter forms? Does he begin

at the right hand side of the page and draw toward the left? The teacher may learn a great deal about the child's visual perception and planning ability from observing his first attempts at writing.

As a general rule, children should be free to use their own methods of writing in kindergarten. The children are concentrating on what is to them a very complex sequence of visual shapes. It is wise not to distract them at first by suggestions about the position of sitting, holding the pencil, and other details of penmanship. Generous praise for any product that is fairly legible is due. Later in the first grade, when the children begin to study the specific skills of handwriting, they will learn about strokes, alignment, proportion, space, and so on. Children are imitative and will tend to mimic the kindergarten teacher's method of writing as they watch her write. As soon as the children are able to write their names fairly legibly, they use this skill purposefully—to identify their drawings and other objects.

After the children have had the experience of pasting titles under their pictures, they may like to see the teacher write labels for objects in the room. When the labels have been in place for a few days, the teacher may ask a child to collect three of them, such as *scissors, pencils,* and *fish.* As he collects each label, he shows it to the class, tells its name, and places the label on the chalk ledge. Other children volunteer to find the labels as the teacher directs, "Find *fish,* find *pencils,* find *scissors.*" She then asks for volunteers to return the labels to the correct objects. This brief experience in identifying a few words can hardly be called *reading,* but it is a step towards word recognition. It helps the teacher to find those children who can form associations between printed words and objects easily.

As the children advance in ability to draw and to tell more about their pictures, the teacher may write down verbatim what is said. The title or caption now grows into a story. The children may select a dozen or more of the stories they like best, illustrate them, and put them into a book. The creation of a class book shows children in a simple way how an author writes a story, how an artist illustrates it, and how the stories and pictures can be bound together to make a book.

It is a simple step from the activity of writing a child's own story

or caption about a picture to the activity of recording group experiences on charts. Experience charts have long been used as transitional steps from oral to written language. The goal of the experience chart is not to teach word recognition but to give the children an opportunity to discover what written language is. The children talk about an interesting experience. They decide what happened first. They select the best way to say it, and the teacher writes down the sentence chosen by the children. The children now are not only creators but editors. After the beginning sentence they decide what happened next, and next after that. The teacher helps but does not dominate. She may say, "I think that sentence is too long for me to write in this space. Can anyone think of a shorter way to say it?" As she writes, she comments on the process, showing how she begins the sentence with a capital letter, how she moves over to leave a little space after each word, and how she finishes with a period. After the chart is finished, the teacher rereads the entire story pointing to each word as she says it. She may ask for a volunteer to point to each word in a sentence as she reads it again. Perhaps the child may then be able to read the entire sentence from memory by himself. The teacher may ask the children to find words in the story that are alike. She may ask them to find the longest word or the shortest word. They may find some words that begin with the same letter, such as *baby bear*. Through experience charts children learn a great deal *about* reading and writing and about the conventions of the process. Sentences are written word-by-word. Words are written letter-by-letter. The reader or writer begins at the left hand side of the chart or page and moves from the left toward the right. Each new sentence begins with a capital letter and ends with a period. Many reading difficulties develop when the simple steps of explaining the process are omitted.

Children need to understand what sentences are and that they are used first in oral language and then in printed language. There are many sentence games that can accompany and extend the concept of a sentence.

The teacher may begin a sentence and ask the children to finish it. She may say, "Yesterday I lost my ————. What might I have lost?" The children repeat the sentence and add at the ending *my*

purse, my note book, my glasses, or other words they may think of.

The teacher may say another sentence, such as "Bobby ate a watermelon." She may then say, "I'm going to say that sentence again but leave out a word. Listen carefully and tell me the word I left out." The teacher then says, "Bobby ate a ————." Through these games the child develops the concept that a sentence is made of words and all the words work together to say something.

Completing an incomplete sentence will contribute to the child's success later in word recognition through context. If the story is about Mike flying a kite and the child cannot recognize the word *kite,* he can think of all the things Mike might fly. If he sees the illustrative picture in the book, he will immediately know that Mike was flying a kite. Or, if he has associated the K-sound with the letter *K,* the initial sound may suggest the words *cat, coat, king,* or *kite,* of which the word *kite* would be most logical thing to fly.

By the time the children can read and write their names, they naturally become curious about the letters in their names. Using their natural curiosity the teacher introduces the names of the letters. A child feels very important when he is able to read the letters in his name in sequence and learns that he has just *spelled* his name. Through alphabet games and activities pupils gradually learn to name most of the letters. This task can be accomplished without pressure and without changing the informal atmosphere of the kindergarten. Academic competition and pressure have no place in the kindergarten.

The children enjoy matching the first letter on their name cards with the alphabet and standing by their initials. The teacher may call attention to the fact that the name cards of Billy, Betty, Bob, and Bradley all begin with the letter *B* and that their names also begin with the same sound. A following step can be a search in magazines or in a picture dictionary for other objects whose names begin with the letter *B* and with the B-sound. Charts of pictured objects whose names begin with the B-sound can be started. The concept that letters stand for sounds is established in this way. When Cora, Carl, Catherine, Carol, Charles, compare their name cards, the children discover another fact. *Charles* begins with a different sound than *Carl, Catherine, Carol* and *Cora,* yet all the names begin with the

letter *C*. The concept that letters can stand for more than one sound is also established early and painlessly.

Finding out this characteristic of the English language early in the game prevents the disappointment and disillusionment that children often feel when they think they have discovered the code of attacking unknown printed words by associating each letter with a sound. They are prepared to come across words that cannot be decoded in this way.

The child does well to start out with the concept of decoding a printed word *first* by anticipating its meaning in the sentence context and *then* by using any clues that he can find through the letter-sound associations he knows. When he does this, each new discovery about letters and sounds can be hailed with interest.

A good reader in the second grade once said, "That word has to be *enough* because that's why the boy stopped eating. But how come there isn't any *f* in the word?" This child was pleased to find that *laugh, rough,* and several other words in English have the same peculiar pronunciation pattern. Finding the variant sounds that a letter or combination of letters can represent is a valuable clue that aids the child both in reading words and in spelling them. It takes a number of years of practice in reading before a child can master all the phonemic-graphemic relationships of the English language. He need not know them before he reads. He learns them from reading and then applies each new one he discovers as an aid to further reading.

Just when should children begin to read? It has been thought for years that children should wait until the first grade and all learn to read together. Parents have been asked not to teach the child anything about reading before the teacher has an opportunity to start the child off in the right way. As we have discovered more and more about individual differences, we know now that children do not come to school with the same prereading abilities. There are wide individual differences in children's abilities and in many of the perceptual and motor skills required to learn to read. Some children learn readily at five years of age in kindergarten. Others do not succeed until they are six or seven years old.

We are not so sure as we used to be about "the right way" to

teach reading. Methods differ and change. Researchers who try to discover the best ways of teaching reading find that there are many uncontrolled variables in each experiment. Results are inconclusive. Important variables seem to be capable teachers, smaller classes, and adaptation of methods to individual and class needs.

There are two schools of thought regarding the desirability of learning to read in the kindergarten. Some educators believe that there are advantages in teaching children to read at the time they show evidence of ability and desire to read, a condition which often happens during the kindergarten year. Many five-year-olds have learned to read happily and have maintained the head start that early reading gave them. Other educators believe that the advantage of early reading is not sufficient to set apart the time for a reading circle of able children in the kindergarten program. They fear that such a program is likely to become rigid and formal.

In a number of schools, kindergarten teachers begin instruction in reading and writing with selected children. They select pupils who have good language abilities and attentional stability, and who give evidence of interest in learning. The teachers select the group cautiously, using prereading tests of intelligence and reading readiness tests to assist their judgment. The teachers maintain the same informal way of helping the children learn that has prevailed in all kindergarten activities.

Although certain children are selected for the reading circle, any child may listen in if he wants to and may remain in the circle if his interest brings him to the group daily.

On the other hand, if a child selected for the circle loses interest and prefers to build, slide, swing, or explore other of the richly rewarding equipment of the kindergarten, he is free to do so. Thus, the reading circle is a flexible group with a core of steady members who come daily plus occasional visitors, minus a few who may prefer to drop out.

Although the management of the kindergarten reading group is informal, the instruction in reading is carefully planned so that the children receive a good basic foundation for reading and writing. Instruction is adapted to the younger ages of the children and to their less mature control of muscles and lower endurance.

One of the most important differences between beginning to read in kindergarten and beginning in the first grade is that all first graders are expected to learn, and parents and children are disappointed if the latter do not learn to read. Unwise pressure may be applied with disastrous results in feelings of failure and rejection of reading by the children.

In the kindergarten, however, joining the reading circle is optional and nonpressured. Children not in the group can see what is going on and get an idea of what learning to read will be like. They may also participate in many of the related activities in auditory perception, visual perception, and motor control. Kindergarteners learn verbal skills related to auditory and visual perception and to the motor skills they will need when they begin to read and write in the first grade.

Summary

1. Oral and written language skills are closely related in that listening, speaking, reading, and writing all use the same vocabularies and syntax of English.
2. Children bring the language of their homes and communities into their classrooms not only at the kindergarten level but into every other grade level.
3. There is a wide range of individual differences in language at every grade level, differences owing to such things as a background of foreign language spoken in the home or differences in dialect, maturity, and language concepts.
4. It is economical of time and effort to coordinate the teaching of all the language skills.
5. The primary purpose of all the language skills is communication.
6. Language that children bring to school undergoes growth and change, growth as children pool their language and change as dialect and colloquialisms are replaced by standard English.
7. The transition from oral to written language takes place in the kindergarten for those children who have not had book experiences at home.
8. An informal reading circle of selected children who have superior

language achievements and who are motivated for reading is often successful in the kindergarten. Other children may be prepared for reading by simple prereading activities in visual perception, drawings, reading and writing names, and associating letter forms with alphabetic names and with the frequent sounds which are represented by initial consonants.

The Effectiveness of an Informal Conceptual-Language Program in Developing Reading Readiness in the Kindergarten

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THE CONTROVERSY over beginning reading instruction has placed kindergarten teachers in a dilemma. Those whose first concern is the social and emotional adjustment of the child are disturbed by the recent emphasis on structured programs originally planned for use in grade one. Others have welcomed formal teaching of reading as an answer to those critics who claim that kindergarten programs have no significant content. One possible solution recommended by Robinson and Spodek (*1*) is that concepts identified by scholars of the subject matter fields become the intellectual goals.

> The content would be developed through instructional materials and experiences from which young children could be expected to gather information, ideas, skills, and attitudes. While the teacher would not be explicitly teaching the basic concepts which she hopes the children will learn, she would be exerting her skill in making available to them selected areas of information and experiences and helping children to make sense out of their assorted collections of data. Without teaching reading and without formal instruction, the teacher would encourage and stimulate children's interests and efforts, thus helping them perceive and conceptualize more clearly.

Such a program would be exciting and creative, but would it prepare Maine kindergarten children for the first grade? To test this hypothesis a Title IV research project was conceived and directed in the kindergartens of a typical Maine community by the state depart-

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ment of education. Since the results were statistically significant in favor of the experimental groups, the classroom activities have been incorporated in a curriculum guide.* This paper reports only the research findings of the study.

The kindergarten classes in the Waterville, Maine, schools were divided into two groups for the study—the conceptual-language program and basal reader workbook approach. The population sample consisted of four classes of pupils, two using the basal program and the others following the experimental approach.** The teachers and pupils were randomly assigned to each of the treatments. Building principals, the city reading consultant, and the project director made unannounced visits to insure compliance with experimental controls.

All the kindergarten classes followed similar daily schedules which included music, art, storytime, games, refreshments, and an hour of creative play where children had a choice of activity time. The classes varied purposely only for twenty minutes of direct readiness instruction each day. After several weeks, at the request of the book company, an extra fifteen minutes were allowed for seatwork in the basal classes.

Children in the basal reader classes used the *Getting Ready to Read* series published by the Houghton Mifflin Company. Each child participated in a daily group activity followed by individual seatwork exercises. Whenever interpretations or modifications were necessary, decisions were made by book company consultants who made regular classroom visits to promote optimum utilization of program.

The conceptual-language approach consisted of many informal experiences designed to simultaneously foster concept attainment and language development. The content of the program consisted of reducing major concepts in economics, geography, and science to experiences that would be readily understood by five-year-olds. Children pursued each significant idea at varying levels of difficulty.

One economic concept, "money is an institution to facilitate the

* A complete description of the conceptual-language program, materials, and procedures used in developing the classroom activities can be obtained from the Maine State Department of Education, Augusta, Maine 04330.

** The study was replicated in ten additional classes, involving 288 children with similar results in favor of the conceptual-language classes.

operation of an exchange economy," was presented over several weeks in the conceptual-language classes beginning with a humorous story related to bartering experiences. Teachers distributed envelopes containing objects which the children used to barter and compare the advantages of money. These activities provided the basis for many language experiences.

Throughout the experiment, teachers in the conceptual-language classes informally and systematically presented 22 language understandings to children who had the maturity and background to profit from exposure. Within the context of each activity, less mature pupils focused on more basic language understandings, such as "reading is an enjoyable experience." Teachers observed children not for the purpose of testing but to provide further experiences so that each child could be involved at a level which was uniquely appropriate for him.

After 116 days of instruction, children in the basal reader and conceptual-language classes were given a battery of standardized tests.* The principle statistical technique was analysis of variance, using covariance whenever the assumptions could be satisfied. The variables studied were visual and auditory discrimination, knowledge of letter names, and reading readiness achievement at the end of the kindergarten. In addition, chronological age, sex, intelligence, socioeconomic status, and adjustment to school were examined. It was possible to determine the influence of these variables, both singly and in combination with the child's reading readiness achievement.

1. At the end of the kindergarten, children in the conceptual-language classes received statistically higher general reading readiness scores on the Metropolitan Readiness Test, Form B, than pupils in the basal reader groups.
2. The use of many language experience activities resulted in a high degree of significance in favor of the conceptual-language classes on the Sheldon Visual subtests requiring discrimination of word forms. This ability relates to the acquisition of a basic sight vocabulary.

* A complete statistical report of test results is available from the Maine State Department of Education, Augusta, Maine 04330.

3. Daily, systematic instruction with workbooks in the basal classes did not produce any significant difference between the groups on the Wepman Auditory Discrimination Test. Incidentally integrating auditory discrimination practice with language experiences proved to be an effective means of developing this skill.
4. Despite 116 days of intensive daily instruction in the basal sections with letter forms, letter names, and sounds, pupils in the conceptual-language program had slightly higher scores on the Murphy-Durrell Reading Readiness Analysis subtests of knowledge of upper and lower case letter names.
5. The study revealed that classifying children by maturity levels through the Gesell School Readiness Test did not provide a discriminating basis for predicting success in either prereading program. When initial variations in developmental levels were statistically controlled, there were no significant differences in the readiness gains between immature and mature children in either the conceptual-language or basal approaches.
6. When the interaction effects of treatment and intelligence were examined, significant differences with children of all ability levels were noted in favor of the conceptual-language classes. The most pronounced difference, however, was in the readiness gains of children of below average intelligence in the informal language centered approach.
7. Neither approach favored either boys or girls. Boys as a group had slightly higher readiness scores than girls in all the treatments, a condition thus raising the question of the influence of factors other than readiness instruction. A deliberate effort was made to provide activities in all the kindergartens consistent with the interests and the roles of the boys.
8. No significant interaction effects were observed between treatments and socioeconomic status. However, the range in the readiness gains between children rated low and high was considerably less among pupils in the conceptual-language classes than in basal classes.

9. The readiness scores of pupils under 64 months and those over 65 months were compared to ascertain the relationship between chronological age and achievement. Neither approach favored either the younger or older pupils; however, when intelligence was controlled, older pupils did significantly better in both treatments than younger children of comparable ability.
10. The results of individually administered concept tests indicated that five-year-olds in the conceptual-language classes were able to apply cognitive understandings in performance situations with considerable insight and precision. Of particular interest was the high degree of significance noted in favor of the conceptual-language classes on performance tests without the benefit of exposure to related content as the study progressed.
11. A claim often made for formal workbook readiness activities in the kindergarten is that they help children to attend to and to follow directions. A number of situations that required pupils to follow directions, to assume leadership, and to complete tasks were presented to matched groups from the conceptual-language and basal classes. The performance of each group was analyzed on the basis of the number of participants, task completion, number of responses offered, and number of different responses. Pupils in the conceptual-language groups were superior to children in the basal classes in all situations, including overall involvement, sharing, and completing assigned work.
12. Three independent ratings by teachers of pupil behavior during the course of the study revealed no observable changes in the adjustment of children. There is no evidence to suggest that either method (informal or structured) would have deleterious social or emotional effects.

Discussion

The indiscriminate use of basal reader readiness workbooks in the kindergarten, involving groups of pupils redeployed in different

activities often for an hour a day, greatly limits the role of the teacher in providing a challenging program. A knowledge of letter forms and names, auditory and visual perception, breadth and depth of experiential background, motor coordination, ability to follow directions, and listening are all parts of a constellation of factors that relate to readiness for reading. These can best be promoted in the kindergarten not through isolated workbook activities but with experiences that afford children opportunities to use their language in situations free of expectancy.

The conceptual-language program provides many forms of stimulation for readiness, allowing each child to progress at a pace which is appropriate for him in terms of his language development and mental maturity. This fact was particularly evident when the performance of children in both approaches was analyzed in terms of mental ability and socioeconomic status. The teacher becomes a diagnostician, assessing each child's strengths and weaknesses and modifying the program to facilitate meaningful involvement in each activity. In small group and individual situations in which their language and conclusions are accepted, children in the conceptual-language approach can pursue significant ideas at varying levels of abstraction.

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Intonation for Beginners

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RECENTLY a second grade boy announced to me, "I found a mistake in my book." He pointed an accusing finger at page 20 of *The King, the Mice, and the Cheese* (3). The picture showed a group of cats in hot pursuit of some mice. The text read:

> The mice-chasing cats did a very good job.

"Where is the mistake?" I asked.

"Don't you see?" he answered impatiently. "In the picture the cats are chasing the mice. But the words say, "The . . . mice . . . chasing . . . cats . . . and the mice aren't chasing the cats. It's the other way around. Don't you see?"

I saw.

I saw that this boy recognized the words in the line, but he had miscued on the intonation of the line. He had read the words almost as if they were in a list rather than in a sentence. And without sensing the intonation pattern for the word *mice-chasing*, he couldn't comprehend the line.

So I read the text aloud to the boy, and, sure enough, intonation aided comprehension.

After we talked a bit about the sentence, he said, "I get it. That tells what kind of cats they were. They were 'mice-chasing' cats. I guess the book didn't make a mistake after all."

I agreed that there was no mistake in the book. But I wondered if there might be a mistake of sorts, or at least an omission, in this child's instructional program. His miscue was an intonation-based error. But no information about intonation had ever been called to his attention. Despite the fact that he constantly used the elements of intonation in speech and oral reading, he wasn't even aware of their existence.

Only within the past few years have linguists, researchers, and teachers become aware of the connections between intonation and certain kinds of reading errors. Goodman (2) showed some connections between intonational miscues and other types of errors in his linguistic taxonomy of reading errors. Morton (4), viewing reading as a part of continuous language behavior, saw that he could describe some reading errors as violations of syntax. Errors attributable to intonation are often violations of syntax. In a review of the literature on oral reading errors, Weber (6) indicated that researchers still have much to discover about miscues connected with intonation.

However, while awaiting those discoveries, primary grade teachers can at least make their students aware of intonation and its elements (juncture, pitch, and stress) in the hope of precluding some intonation miscues. Pival (5) suggested that diagnosis and treatment of intonation problems will not only result in better oral reading but will also improve comprehension.

Most linguistically oriented teachers have already read a basic linguistics text, such as that by Allen (1), and have thereby acquired some information about juncture, pitch, and stress as the intonation elements in oral language. These teachers know that a juncture is similar to a pause in speech or oral reading. (Junctures help a listener distinguish between *Billy said, "Mother."* and *"Billy," said Mother.*) They know that pitch involves a rise or fall in vocal tone. (Pitch helps a listener distinguish between *Ready?* as a question and *Ready.* as an answer.) They know that stress is similar to accent. (Stress helps a listener distinguish between homonyms in the sentence: *Let's contést his decision on the cóntest.*)

But it is one thing to have a nodding acquaintance with these elements of intonation and quite another thing to know how to blend juncture, pitch, and stress into the primary reading-instruction program.

A group of graduate students at Rutgers University helped the writer develop and try some ways of creating awareness of the elements of intonation in primary pupils. We also worked out ways to get reading-instruction mileage from this awareness of juncture, pitch, and stress.

Juncture

The following tape-recorded sample shows one type of approach we developed. This excerpt is taken from a first grade lesson introducing juncture.

Teacher: Boys and girls, close your eyes. I'm going to say three words. I think each of you will get a picture in your mind's eye when I say those three words. Be ready to tell me about the picture you get. Here are the words: *Let's eat, Mother.* What do you see?

Student: I see some corn on the cob to eat and some crackerjacks and watermelon. There's a boy there, and he's hungry. So he's telling his mother, "Let's eat."

Teacher: Good. Now close your eyes again. I'm going to say the same three words, but I think you'll get a different picture in your mind's eye. *Let's eat Mother.*

Student: I see a big, round pot and a circle of cannibals. Mother is in the pot, and the baby says to the family, "Let's eat Mother now." But the brother says, "Not now. She's not cooked yet."

Teacher: You saw quite a picture! But explain something to me. The words were the same in the two sentences that you heard. But the pictures that you saw in your mind's eye were not the same. So there must have been *some* difference between the sentences. Listen again and see if you can hear a difference in the way I say the sentences; *Let's eat, Mother. Let's eat Mother.*

Student: You kind of stopped for a little in the first sentence.

Teacher: Yes, in the first sentence I paused after the word *eat* before I went on to the word *Mother.* That pause is called a juncture. A juncture is a signal you can hear. Now I'll put the two sentences on the board.

Let's eat, Mother.
Let's eat Mother.

You *heard* a difference between the two sentences. Now do you *see* a difference?

Student: (pointing at the comma) That little thing right there! That's the difference.

Teacher: Right. That little thing is called a comma . . . .

As you could probably predict from this excerpt, the lesson went on to develop the relationship between the comma (a signal that pupils can see) and the juncture (a signal that pupils can hear). Many sentences that beginners meet in preprimers and primers include the comma of direct address. So a beginner must know the relationship between that comma and a juncture to read orally with natural intonation and to avoid miscues that hamper comprehension.

Pitch

Another technique that we developed for blending intonation into the primary reading program involved having students orally read an unpunctuated passage. The teacher used this exercise to call attention to pitch as an element of intonation since a drop in pitch as well as a juncture signals the end of a sentence.

While listening, the pupils could note how the oral reader used falling pitch as an end-of-sentence signal. They could also discover how badly a reader needs punctuation.

Here is a sample passage, as printed on the chalkboard. Below the passage is excerpt from a tape of a second grader reading the passage aloud. (The arrows show where the second grader applied drops in pitch to the passage.)

> Joe and Paul were racing Joe was leading Paul was close behind Joe glanced around Paul was up with him now Paul was in the lead

Student: *Joe and Paul were racing↓ Joe was leading Paul↓ . . . was close* . . . No, that's not right. *Joe and Paul were racing↓ Joe was leading↓ Paul was close behind Joe↓ glanced* . . . Wait a minute. You know, this would be easier with periods. *behind Joe glanced* . . . No. . . . *Paul was close↓ behind Joe glanced around* . . . That doesn't sound right. I'll start over again . . . .

When the students reached the last line of the passage, they had a hot debate over the proper placement of the drop in pitch and the juncture within that line. Which should it be?

Paul was up with him now↓ Paul was in the lead↓

or

Paul was up with him↓ Now Paul was in the lead↓

This type of lesson points out the connections among intonation and punctuation and comprehension. The miscues made by the oral reader are similar to those made by primary pupils who can't translate punctuation into intonation. Leroy-Boussion (5) attributed much of the difficulty that beginners have with silent reading to their lag in internalizing intonation.

Stress

It was relatively easy to show primary pupils some connections between punctuation (printed signals) and juncture and pitch (oral signals). But it was harder to show primary pupils the connections between stress and oral reading because there are so few ways of signaling stress in print. Sometimes printers use a different kind of type or an underline, but these features are rare in primary reading textbooks. And accent marks are not suitable fare for beginners.

So the job of the teacher is to help the student understand 1) that stress is a natural part of oral language, 2) that written language is not an exact reproduction of oral language, and 3) that one job of the oral reader is to supply meaningful stress from context.

But before the teacher can work on those concepts, the student has to be aware of stress. He has to discover that he stresses certain words in his stream of speech by saying them with extra force or loudness. He has to find out when and why he uses stress.

To help him start making these discoveries, a teacher might put this sentence on the board:

Jim has a new coat.

Then she might say, "Boys and girls, I want you to use the sentence on the board as the answer for each of the questions that I am going to ask you. You can't change the sentence. You can change only the way you say it."

The teacher could be sure of eliciting shifts of stress from the pupils by asking these questions.

1. Did you say Jim has a new *boat*? (Jim has a new *coat*.)
2. Did you say Jim has a new coat? (Jim has a *new* coat.)
3. Did you say *Tim* has a new coat? (*Jim* has a new coat.)

Our tape recordings showed that many pupils managed to figure out from the sentences about Jim's new coat that stress can be used to emphasize a word. And they carried over into their oral reading the idea of emphasizing or stressing important words.

Beginning readers need awareness of juncture, pitch, and stress. They also need to know the relationships between intonation and punctuation. With only punctuation signals and context clues as guides, beginners must produce the appropriate variations of juncture, pitch, and stress when they read orally.

A few beginners do this job with ease. Those few automatically transfer the natural intonation of their speech to their oral reading. But most beginners make miscues when they attempt this transfer. And some of these intonation miscues result in comprehension problems, such as the one that the second grade boy brought to me when he had trouble with the sentence, "The mice-chasing cats did a very good job."

If primary grade teachers want to do as good a job as those mice-chasing cats were doing, perhaps they should teach intonation to beginners.

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The Sexual Factor in Language Development and Reading

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IN THE PAST THIRTY YEARS, much research has been dedicated to investigating the disparity in reading achievement between boys and girls. While some studies fail to reveal significant sex differences, the majority indicate that girls generally excel boys, particularly in the first three grades. Weintraub (*17*) notes that "Various studies at readiness or beginning levels show differences or no differences between boys and girls, depending upon the skill or ability being measured." While such factors as increasing maturity, instructional methods, or high-interest materials can modify the initial inequality, most of the research in language development and reading indicates that the "sex gap" exists at all levels, from kindergarten to college.

Preprimary Level

In April 1966, a progress report for Headstart Operational Field Analysis gave results of an analysis of the relationship between sex and concept attainment among preschool children. Allerband (*1*) reported on studies of 191 children after two, four, five, and six months of kindergarten. Concept attainment was determined by observation within the classroom setting; the children were rated on color concept, form-space concept usage, grouping, ordering, time sequence, and time duration. Results of the analysis at the end of six months indicated that boys are more effective in visual discrimination and girls, more effective in handling performance demands.

One hundred fifty-three children in a study conducted by Zoodsma (*20*) in Nebraska were tested for reading readiness before they entered kindergarten. Tests used were the ABC Inventory, gross muscular development and coordination tests, and selections from the Wechsler Preschool and Primary Scale of Intelligence. From the

results, children were separated into low-readiness and high-readiness groups. Boys accounted for approximately 76 percent of the low-readiness group.

At the University of Minnesota, Rubin and Balow (*10*) compared prekindergarten and prefirst grade (second semester kindergarten) boys and girls on measures of school readiness and language development. Their report listed results of testing 638 prekindergarten children and 570 prefirst graders. In school readiness, measured by the Metropolitan Readiness Tests, the children were tested on word meaning, listening, matching, alphabet, numbers, and copying. At the prekindergarten level, girls scored higher in all but word meaning. At prefirst grade level, girls scored higher in all but word meaning, with significant differences noted in matching and alphabet. Prefirst grade boys fell at the 35th percentile; prefirst grade girls, at the 42nd.

In studying the effect of training in perceptual-motor skills on reading readiness development, Rutherford (*11*) found a significant relationship between the training program and the sex factor. Seventy-six children between the ages of five and seven were compared in performance on the Metropolitan Readiness Tests after a program of playground activity in which the experimental group was given specialized training to develop perceptual-motor skills. In the control group, which engaged in routine playground activities, the girls showed greater gain than the boys in reading readiness development. However, in the experimental group, the boys made greater gain than the girls. These findings would seem to indicate that boys require more early training in perceptual-motor skills than girls.

Primary Level

The sex factor was one consideration of a Florida study by Spache and others (*13*) to determine the effect of an intensified and extended reading readiness program upon first grade reading achievement. Sixty-four first grade classes (racially mixed, Negro and Caucasian) were tested on visual discrimination, auditory discrimination, and language abilities. Findings disclosed that "sex differences

favored girls at all levels in the white control population and tended to favor girls at the lower levels in the experimental population. At the two upper levels of ability among white experimental pupils, sex differences appeared to be overcome or counterbalanced by factors in the experimental program."

Three studies published in 1966 analyzed sex differences in data comparing different approaches to reading instruction at the first grade level. Tanyzer and Alpert (*16*) investigated the effect of three different basal systems (Lippincott, Early-to-Read i.t.a., and Scott, Foresman) on the reading achievement of first grade children according to sex and different levels of intelligence. They found that in each of the three basal systems, girls achieved higher mean scores. Significant differences occurred on the spelling and paragraph meaning subtests of the Stanford Achievement Test.

Wyatt (*19*) reported her findings in a study which compared reading achievement of 633 first grade boys and girls, using two different experimental approaches. The first grouped children by sex as well as ability and used materials related to interests based on sex differences (boys used Houghton Mifflin and Ginn texts while girls used Scott, Foresman). The second experimental group used linguistic materials. A multibasal approach was used by the control group. Analysis of readiness test results revealed that girls were significantly higher on auditory discrimination and knowledge of the alphabet while boys scored a significantly higher mean on the test measuring knowledge of word meaning. Achievement tests showed that girls were significantly higher on paragraph meaning, spelling, and word study. The researcher observed that "girls in the study seemed better equipped for reading at the beginning of the instruction period, and this advantage was retained. Reading achievement of boys seemed to depend on something other than the teaching method used after entering formal instruction."

Another study comparing reading achievement in a linguistic versus basal reader approach indicated superior achievement for girls. Schneyer (*12*) reported a study of 674 Pennsylvania first graders. At the conclusion of a 140-day instruction period, girls scored significantly higher than boys in the Linguistic Reading Test, the Philadelphia Reading Test, and the subtests for paragraph

meaning, spelling, and word study skills of the Stanford Achievement Test.

Research begun in 1963 to evaluate another method of teaching reading revealed that girls' achievement was higher in the first two grades. Hanson (*6*) studied the achievement of Pasadena, California, children in grades one, two, and three using the phonovisual method supplementary to the basal readers. Children were matched in pairs of two boys or two girls of equal age and intelligence. Grade one was tested on vocabulary and comprehension; grades two and three were tested on vocabulary, comprehension, and spelling. Results showed that girls' achievement was higher than boys' with the exception of grade three in the experimental group.

In England, Hammond (*5*) published her findings based on identical surveys of reading attainment in 1947 and 1962. Approximately four thousand boys and four thousand girls, ages five to eight, were tested in the primary schools of Brighton; the results compared reading ages with chronological ages. In both years, girls, on the average, reached a reading age equivalent to chronological age more quickly than boys. A larger proportion of boys was found to be backward in reading. In 1962, the number of boys below average was balanced by the number above average at the age of eight while this aspect was true of the youngest age of the group of girls.

Upper Elementary Level

While the preponderance of research in reading difficulties takes place at the crucial primary level, studies of older children support the evidence that boys experience more difficulty than girls in language development. During the 1940s, one of the largest research projects on sex differences in school achievement was conducted by Stroud and Lindquist (*15*) in more than three hundred Iowa schools. Some fifty thousand pupils in grades three through eight were tested with the Iowa Every-Pupil Basic Skills Test on reading comprehension, vocabulary, word study skills, basic language skills, and arithmetic skills. In all of the language development skills, the girls maintained a consistent, significant superiority over the boys.

Research published in 1965 disclosed the general superiority of

girls in language arts in the upper elementary grades. Jarvis (*7*) made a survey of the educational status of 347 girls and 366 boys in language arts at the sixth grade level. The classification of boy-girl pupil was subdivided on the basis of intelligence in order to determine more precisely the relationship between innate abilities and proficiencies to do grade level work. Findings, as measured by the California Short Form Test of Mental Maturity and the California Achievement Test Battery, Form W, were studied from the point of view of the percentage of pupils working above, at, or below grade level. In the above-grade-level group, girls were found to be superior generally to their peer group of boys in the various classifications of bright, average, and dull in every area; one exception occurred in the bright group where boys excelled girls in reading vocabulary and comprehension. In reading vocabulary, boys and girls with superior intelligence achieved at comparable levels while in comprehension the boys did slightly better than the girls.

At grade level, there was no large percentage difference between boys and girls, except among the dull group in language mechanics; 8 percent more girls were working at grade level than a comparable group of boys. There was a smaller percentage of girls at below grade level in all subject areas except in language mechanics where none of the boys and one percent of the girls were below grade level. It was concluded that girls at the sixth grade level tend to excel in language arts achievement.

Research as high as the college level indicates that the sex factor continues to exist in performance of language skills after 12 years of school. A study by Aven and Chrisp (*3*) at a northeastern university tested 1,341 college freshmen in English proficiency. Their research revealed that significantly more boys than girls scored below the 50th percentile.

While different approaches to instruction, different reading materials, and different teacher attitudes, each or all, may favorably affect boys' language development, the fact remains that girls achieve better than boys and that sex differences in language development and reading achievement vary, depending upon the skill or ability tested.

The writer's research with sex-segregated reading groups revealed

definite differences in the language development of boys and girls. The study was conducted in the Los Angeles City Schools to determine whether boys' reading achievement would be affected by instruction in sex-segregated groups. Approximately 550 first graders—black, Mexican-American, and white—were taught beginning reading with a grouping procedure consisting of all boys, all girls, and mixed boy-girl groups. At the end of the school year, test scores indicated that girls, as a group, achieved significantly more than the boys and also showed significantly greater reading growth. Analysis of the data did not show that boys taught alone gained significantly more in achievement or in growth than boys taught in heterogeneous sex groupings. The study did, however, reveal seven basic areas of difference in the language-development patterns of boys and girls. Six years of subsequent research supported these findings.

Verbal Facility

Boys were found to be verbally less adequate than girls. They had greater difficulty in articulation, enunciation, and pronunciation. In contrast to the verbal fluency of the girls, the boys spoke in incomplete and fragmentary sentences. Boys participated less in class and did so primarily when interested in a particular subject. This motivational factor, presumably, is responsible for the fact that, although boys are less articulate than girls, they tend to compensate by developing enriched vocabularies in areas in which they are interested. In his doctoral study, Flaherty and Anderson (*4*) found that "first grade children master oral vocabularies that reach out into state, national, and world events. This vocabulary includes many words of a scientific nature that would be appealing to boys."

In subsequent research by the writer, special materials were developed to help boys overcome the observed difficulties in oral language skills. Flannel board stories with attractive cut-outs were used to develop specific speech sounds and to encourage verbalization. Storytelling and dramatization became a regular part of the daily program. Puppets—simple paper bag, stocking, and stick types—were also used to free children from tension, to allow identification with a story character, and thus to promote involvement in oral language

activities. Also effective were study prints which presented high-interest situations and stimulated children to think and discuss. Children were encouraged to talk and answer questions about inferences, cause-and-effect relationships, comparisons, predictions, sequence, and main ideas. Some of the study prints introduced the characters of the readers. These not only provided an incentive for telling stories but also created interest in the new books and developed an oral vocabulary in preparation for reading.

Listening Skills

That listening patterns continue to reflect sex differences as children mature is suggested by a Texas study on listening. Winter (*18*), in research with 563 boys and girls in the upper elementary grades, correlated results of the STEP Listening Comprehension Test with the SRA Achievement Test and the California Test of Mental Maturity. In analysis of results, the mean for the girls was slightly higher than that for the boys.

In the writer's research, boys were observed to be poor in listening as well as verbalizing. Their performance in this area was also dependent upon their interest in the subject. It was noted that boys tended to listen more intently when the material being presented had multisensory appeal. The writer found that boys respond enthusiastically to such instructional aids as recordings of the sounds of airplanes, trucks, trains, etc.; taped stories and poems; and directional games such as "Simon Says." Individual flannel boards, pocket charts, chalkboards, and acetate slates were highly successful in promoting listening skills in situations in which the children followed steps in a teacher-directed activity.

In the areas of both verbal facility and listening skills, sex differences seem to be influenced by cultural factors. McCarthy (*8*) suggests that girls' early language superiority results partly from earlier physical maturity and partly from social interests which stimulate language development to a greater degree than the boys' interests, which center around physical activity. Further support for cultural explanation of these differences has been reported by Anderson (*2*) who observed that in Japan, where male children are given pref-

erential attention in both home and school, the language development of boys is more advanced than that of girls.

Auditory Discrimination

Boys' lack of verbal facility and their inadequate listening skills can be considered contributory factors in another area of difference in language patterns. It was observed that boys had much greater difficulty than girls in making auditory discriminations and in hearing common phonetic elements. Girls learned to recognize sounds in one-half to one-third the time it took boys to identify the same sounds. These observations are supported by Wyatt's study (*19*) in which girls' reading readiness scores in auditory discrimination were significantly higher than boys'.

In the writer's research studies, the development of auditory discrimination skills was stimulated effectively by the use of phoneme boxes, which contained small objects representing the initial consonant sounds to be studied. Children handled the objects, repeated the names, and learned the letter which corresponded to the initial sound. For example, the *D* box contained such objects as a dog, doll, duck, dish, and donkey. Phonograms were also taught with similar boxes containing rhyming objects, such as a toy car and a wooden star; a small bell and a sea shell; a little wooden house and a toy rubber mouse. After initially teaching sounds with tangible objects, the children progressed in development of sound-symbol relationships with pictures which represented the different sounds. Rhymes, riddles, and stories which related to the preprimers were also used successfully.

Attention Span

The attention span of the boys, in general, was found by the research teachers to be shorter than that of the girls. From observation of children in the study, the attention span of boys varied between 12 and 15 minutes while the girls could attend for 20 to 25 minutes. However, the boys' ability to pay attention seemed to depend upon the activity. Teacher-observers noted that "boys can

pay attention for a long time if they're doing something active and dynamic, either mental or physical." It is, therefore, not surprising that boys' attention lags in classrooms which traditionally are feministically oriented. This viewpoint was expressed by Durkin (*14*) who stated that "everything about the typical primary reading program is much more feminine than masculine." Durkin urges teachers to stimulate boys' interest with stories about dinosaurs, cowboys, and sports heroes and with attention-getting bulletin boards featuring pictures of sports and nearby building projects.

Story Preference

The area of attention is closely related with that of story preference or subject-matter interests. In the all-boy reading groups of the study, teachers found it difficult to interest boys in subjects that did not have the appeal of the unusual and the dynamic. The teachers' ingenuity was constantly being challenged to provide material with action and excitement. Teachers of the all-girl groups had no problem holding the interest of their pupils in a variety of subjects. This view has been supported by the interest studies of Lazar, Terman and Lima, Rankin, Thorndike, Norvell, and Stanchfield. These studies have shown that boys have special interests and do not like the so-called "girlish" books, whereas girls like the boys' preferences as well as their own special books.

The writer found, in research about boys' reading preferences, that among the kinds of stories most liked by boys were those featuring exploration and expeditions, outdoor life, sports and games, science fiction, sea adventure, and fantasy. Least-liked categories include stories about music and art and family and home life as well as plays and poetry.

Personality Style and Activity Levels

Sex differences in personality and activity levels were found to have bearing on the language development of boys and girls. Boys were found to be more aggressive and less conforming than girls in the classroom situation. Their vigorous physical drive and their lower

frustration level for boredom created discipline problems. These so-called "negative" behavioral responses were very evident to teachers of sex-segregated reading groups and the implications were considered in planning and developing a better learning environment for boys. It was concluded that language skills must be taught in varied and exciting ways to capture and hold the imagination of boys, with much behavioral involvement. Specific physical responses were encouraged with the use of individual chalkboards, acetate slates, pocket charts, and flannel boards. Colored marking pens were also found to be an excellent motivating device.

Another area of observed personality difference was that of the ability to adapt easily and quickly to new situations. Teachers referred to this behavior as part of an "adaptive syndrome." Boys had more difficulty than girls in adjusting to new situations and in coping with changes in the learning process. Because of this difference, it was felt that boys might find security in reading stories in a series with characters that were known and enjoyed.

Goals and Motivations

Study of children in all-boy and all-girl groups revealed and emphasized the relationship between achievement in language development skills and motivation for learning. Girls in the research were eager to please the teacher and were more quickly motivated by praise to work hard and do their best at a given task. Generally, the boys were less anxious to please, less motivated to develop good work habits, less desirous of assuming responsibility, and less self-motivated in learning to read. It was noted, however, that boys could be more enthusiastic, more curious, and more tenacious than girls in trying to solve a problem or learn something in which they were interested. In the terminology of Riesman (*9*) teachers stated that boys tended to be more "inner-directed" than "other-directed." They were more concerned with learning to read to find out something they wanted to know or to do something which interested them.

The writer's studies and the research of other investigators in the area of language development have indicated significant differences between boys and girls in learning patterns and achievement.

It is apparent that boys need more motivation, help, and specialized attention in this area of the learning process. Knowledge of the language development patterns of boys can provide teachers with insight into their learning problems and can suggest the necessary attitudes and instructional approaches that will enable boys to master language skills with enjoyment and satisfaction. The skill, the effort, and the concern required present a mountainous challenge, but the teacher's reward is the gift of literacy to her students—the "bequest of wings" bestowed upon her pupils.

As expressed by Emily Dickinson . . .

> He ate and drank the precious words,
> His spirit grew robust;
> He knew no more that he was poor,
> Nor that his frame was dust.
>
> He danced along the dingy ways,
> And this bequest of wings
> Was but a book. What liberty
> A loosened spirit brings.

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Certain Home Environmental Factors and Children's Reading Readiness

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THE PURPOSE of this study was to discover possible relationships which may exist between certain home environmental factors and children's reading readiness in kindergarten. Specifically, the home environmental factors studied were maternal teaching style, maternal language style, children's daily schedules, and home prereading activities.

Related Research

Bernstein (*1*) apparently was the first researcher to differentiate and describe two language styles which typically are used by members of different social classes. He described the elaborated language style, primarily used by members of the middle class, as a manner of speech in which a person usually employs complex sentence structure, many uncommon adjectives and adverbs, a precise vocabulary, and correct grammar. On the other hand, Bernstein described the restricted language style, typically used by members of the lower classes, as a manner of speaking in which an individual employs simple sentence structure, few uncommon adjectives and adverbs, an imprecise vocabulary, and incorrect grammar.

Hess (*3*) and his associates conducted research at the Urban Child Center of The University of Chicago on the relationship between maternal language style and children's cognitive level. They found a significant relationship between the level of abstraction of a mother's language and the cognitive style level achieved by her child. These researchers discovered that if a mother employed an elaborated language style, her child was very likely to employ a high level of cognitive style.

In another study, Hess and his associates (*2*) discovered that a mother's teaching style, as illustrated during a structured mother-

child interaction in which each mother taught her child how to reproduce several designs on an "Etch-a-Sketch," was related to the cognitive style level achieved by her child. These researchers discovered that if a mother employed an active teaching style in which she gave her child specific directions about reproducing a design, the child usually achieved a high cognitive level. On the other hand, they found that if a mother employed a passive teaching style in which she gave few specific directions and little reinforcement as the child was reproducing a design, her child generally achieved a low cognitive level.

Miller (*4*) conducted research in which she attempted to relate several home environmental factors and children's readiness in kindergarten and subsequent first grade reading achievement. She found that maternal teaching style as illustrated during a structured mother-child interaction in which each mother taught her child how to assemble a simple jigsaw puzzle was related to children's reading readiness but not to first grade reading achievement.

Miller further discovered that maternal language as evaluated by the five language scales of mean sentence length, adjective range, adverb range, verb elaboration, and complex verb preference was not related to reading readiness, but maternal language as measured by the scale of syntactic structure elaboration was related to reading readiness. She found that maternal language as evaluated by the scales of mean sentence length, adverb range, and syntactic structure elaboration was related to first grade reading achievement.

Miller further determined that children's typical daily home activities were not related to children's reading readiness nor to first grade reading achievement. She also found that home prereading activities as ascertained from mothers by the use of a structured parent schedule were related to children's reading readiness but were related to first grade reading achievement only in the middle class.

Data Collection Procedures

The sample for this study consisted of 75 mothers and their 75 kindergarten children residing in a central Illinois city. The sample was divided into three social classes using the criteria developed by

Hess and his researchers (*3*). The middle-class group consisted of mothers and children who were members of college-educated professional, executive, or managerial families; the upper-lower class group was composed of mothers and children who were members of high school-educated skilled families; and the lower-lower class mothers and children were members of predominantly elementary school-educated semiskilled or unskilled families. Each group consisted of 25 mothers and their 25 children.

During the winter of 1968-1969 the investigator conducted home interviews with each mother and child to gather four types of data. A structured mother-child interaction which consisted of each mother showing her child how to assemble a simple jigsaw puzzle of the Winnie-the-Pooh motif was designed to assess maternal teaching style in terms of active or passive teaching characteristics. A tape recorded language protocol also was obtained from each mother as she told her child a story about a picture from a book the investigator brought to the home interview. This language protocol later was analyzed using the following language scales that were formulated by Hess and his associates: mean sentence length, adjective range, adverb range, verb elaboration, complex verb preference, and syntactic structure elaboration. The typical daily home activities of each child also were obtained from each mother. Finally, home prereading activities in which each child had engaged were ascertained by the use of maternal responses to a structured parent schedule of home prereading activities.

In May 1969, the investigator administered the Murphy-Durrell Reading Readiness Analysis to the 75 children in the sample. These children were attending kindergarten in six elementary schools in a central Illinois city. Relationships existing between the variables obtained during the home interviews and the children's total score on the reading readiness test were analyzed by the use of correlation procedures.

Results

From examination of Table 1, it is evident that maternal teaching style as illustrated by maternal statements during the structured mother-child interaction was not significantly related to

children's reading readiness. This table indicates that none of the correlations came close to being significant.

TABLE 1

CORRELATIONS BETWEEN MATERNAL TEACHING STYLE AND CHILDREN'S READING READINESS SCORES

Independent Variable	*Correlation Coefficient*
Maternal Teaching Style (Middle Class) (N = 25)	.00
Maternal Teaching Style (Upper-Lower Class) (N = 25)	.05
Maternal Teaching Style (Lower-Lower Class) (N = 25)	.12

Table 2 indicates that in general there was no significant relationship between maternal language as evaluated by six language scales and children's reading as measured by readiness in the middle class. However, the maternal language scale of syntactic structure elaboration more nearly approached a level of significance than did the remaining five language scales.

TABLE 2

CORRELATIONS BETWEEN SIX MATERNAL LANGUAGE SCALES AND CHILDREN'S READING READINESS SCORES

	Correlation Coefficient		
Independent Variables	*Middle Class*	*Upper-Lower Class*	*Lower-Lower Class*
Mean Sentence Length	.18	.19	.09
Adjective Range	.12	.27	.25
Adverb Range	−.12	.34	−.05
Verb Elaboration	.04	.14	−.34
Complex Verb Preference	.06	.01	.11
Syntactic Structure Elaboration	.22	.36	.07

Also from examination of Table 2, one can note that in the upper-lower class no significant correlations were found between maternal language as measured by six language scales and children's reading readiness. However, also in this group maternal language as

measured by the scale of syntactic structure elaboration more nearly reached a level of significance than did maternal language as measured by the remaining five language scales.

In the lower-lower class there were no significant correlations found between maternal language as measured by six language scales and children's reading readiness. However, in this group maternal language as measured by the scale of verb elaboration more nearly reached a level of significance.

One can note from Table 3 that there were no significant correlations found between children's daily schedules in any of the three social classes and children's scores on the reading test. None of these three correlation coefficients approached a level of significance.

TABLE 3

CORRELATIONS BETWEEN CHILDREN'S DAILY SCHEDULES AND CHILDREN'S READING READINESS SCORES

Independent Variable	*Correlation Coefficient*
Children's Daily Schedules (Middle Class) N = 25	−.19
Children's Daily Schedules (Upper-Lower Class) N = 25	−.05
Children's Daily Schedules (Lower-Lower Class) N = 25	.00

Table 4 indicates a significant correlation coefficient (.05 level) between home prereading activities in the middle class and children's reading readiness scores. However, no significant correlations were found between home prereading activities and children's reading readiness within the upper-lower and lower-lower classes.

TABLE 4

CORRELATIONS BETWEEN HOME PREREADING ACTIVITIES AND CHILDREN'S READING READINESS SCORES

Independent Variables	*Correlation Coefficient*
Prereading Activities (Middle Class)	.39*
Prereading Activities (Upper-Lower Class)	.18
Prereading Activities (Lower-Lower Class)	.07

* Significant at the .05 level.

Conclusions

The findings of this study indicated that only the home environmental factors of maternal language as evaluated by the three scales of syntactic structure elaboration, adverb range, and verb elaboration and home prereading activities were found to be related to children's reading readiness in kindergarten.

However, maternal language may still warrant additional research because of its possible relation to children's reading readiness in kindergarten. Although the correlation coefficients did not reach the .05 level of significance, one must remember that the size of the sample was small.

The absence of significant correlation coefficients between home prereading activities in the upper-lower and lower-lower classes and children's reading readiness, indeed, is a surprising finding. The writer's previous research discovered significant correlations between these two variables in all three social classes. Therefore, the converse findings in this study cannot be explained by the writer in the light of previous research.

Therefore, the relation between maternal language and children's reading readiness and between home prereading activities and children's reading readiness undoubtedly needs additional replication research.

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